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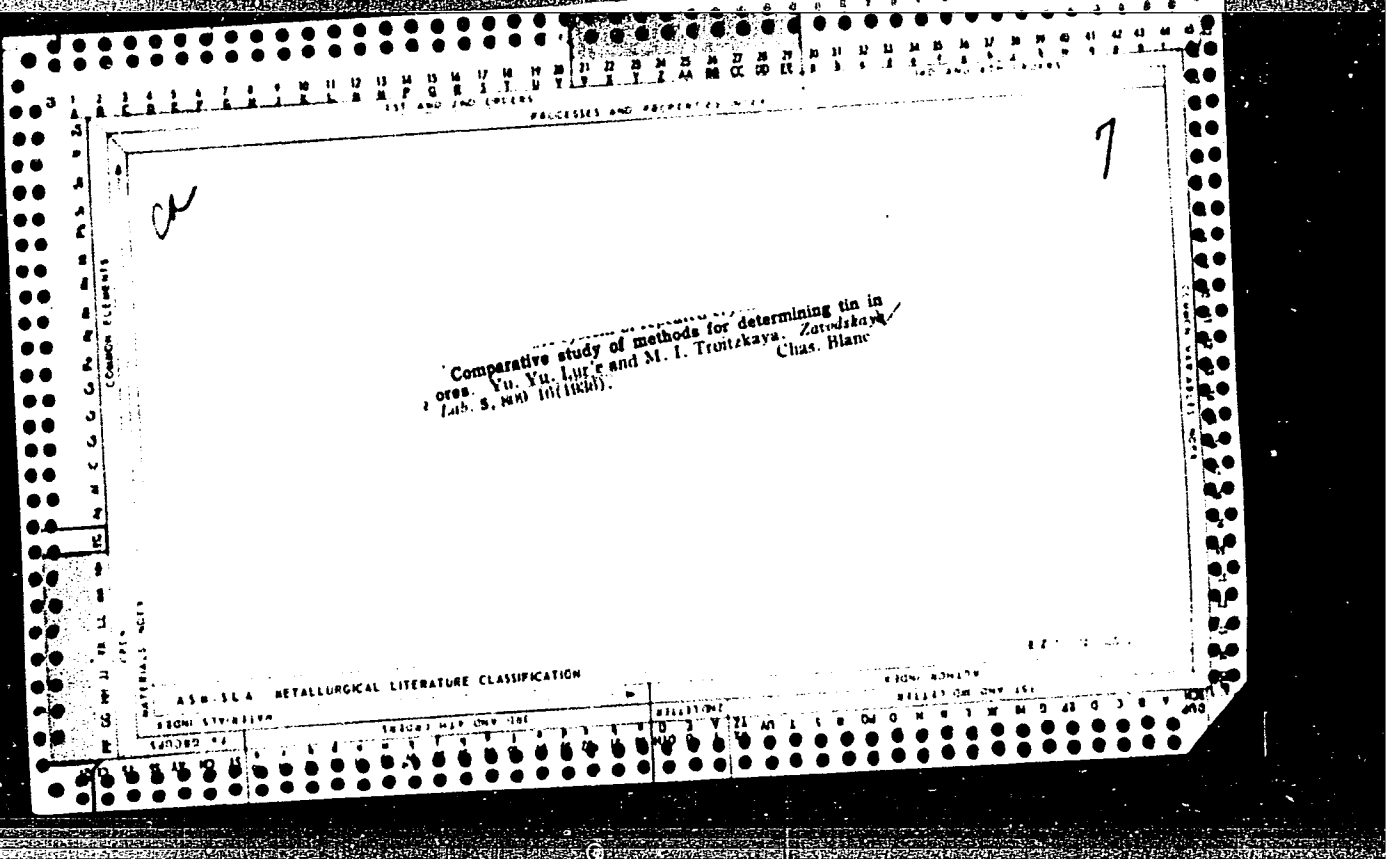
PROCESSES AND PROPERTIES OF METALS

**Rapid determination of zinc in copper ores and products of copper smelting.** Yu. Yu. Jurek and V. F. Neklyutina. *Zametki po Lab. S. 1174 (1965)*. In the detn. of 0.02 g Zn in the presence of large amts. of Cu by the method previously described (A. 26, 20) NaF is substituted for tartaric acid for the fixation of Fe, because FeF<sub>4</sub> is more stable than the Fe tartarate complex. By using a large excess of NaF it is possible to work with strongly acid solns. which ensures a rapid and complete pptn. of min. amts. of Zn as ZnH<sub>2</sub>(CNS)<sub>2</sub>. Since the detn. must be complicated with some NaAlO<sub>2</sub>, the detn. must be completed by titration. Chas. Blanc

ADD SLA METALLURGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100





1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

7

Determination of copper in metallic nickel. Yu. Yu. Linc's and M. I. Troitskaya. *Zavodskaya Lab.* 6, 335 (1967); cf. *C. A.* 31, 64. --The method of internal electrolysis is used for sepg. Cu from Ni with the aid of a Pb plate. Full details are given for carrying out the procedure and the results in detg. 0.066-0.24% Cu were excellent. Chas. Blanc

ASB. SIA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

1ST AND 2ND ORDERS

**COMMON ELEMENTS**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

**PROCESSES AND PROPERTIES INDEX**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

**ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION**

**EXTRACT**

*ca*

7

Comparative study of methods for determining tin in ores. H. Yu. Lur'e and M. I. Troitskaya. *Zhurnal' Khim. Laz. G.* 163-9 (1937); cf. C. A. 30:7400. C. H.

**EXTRACT**

PROCESS AND PROPERTIES 517

7

*Ca*

**Rapid determination of lead in lead-zinc ores, concentrates and their products.** Yu. Yu. Lur'e and L. B. Ginzburg. *Zarodskaya Lab.* 6, 280 (1937). (1) Heat 0.5-1.0 g. of sample with 10 ml. of concd. HCl and with 5 ml. of concd. HNO<sub>3</sub>. Dil. the resulting soln. with 50 ml. of water and 5 ml. HCl. Boil, filter and allow to cool. To the cold soln. add 0.5-1.0 g. tartaric acid, a slight excess of NH<sub>4</sub>OH and 5 ml. of AcOH. Dil. to 100 ml. and ppt. PbCrO<sub>4</sub> with 10 ml. of 5% K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>. Filter and wash the PbCrO<sub>4</sub> with dil. AcOH. Dissolve the ppt. in a mixt. of 1 g. satd. NaCl soln., 15 ml. water and 100 ml. of concd. HCl. Dil. the filtrate and det. the Cr iodometrically. (2) To the soln. prepd. as in (1) add a slight excess of NH<sub>3</sub> and dissolve any ppt. of Fe(OH)<sub>3</sub> by adding 10 ml. of 3 N HNO<sub>3</sub>. Dil. to 250 ml. and ppt. PbCrO<sub>4</sub> by means of 10 ml. of (NH<sub>4</sub>)<sub>2</sub>CrO<sub>7</sub>. Filter, wash and dissolve as in (1). To this soln. add water to make 200 ml., add 2 ml. H<sub>3</sub>PO<sub>4</sub> and a measured vol. of 0.1 N FeSO<sub>4</sub>. Titrate the excess Fe<sup>++</sup> with standard K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> soln. with diphenylamine as internal indicator. (3) Dissolve the sample as in (1) but with the omission of the final HCl treatment. Ppt. the Pb as PbCrO<sub>4</sub> by means of a measured vol. of 0.1 N K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>, filter and take an aliquot part of the filtrate for the detn. of the excess K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>, finishing the analysis as in (2). Chas. Blanc

ASB-51-A METALLURGICAL LITERATURE CLASSIFICATION

OPEN MATERIALS INDEX

INDEX NUMBER

1ST AND 2ND CROSS

3RD AND 4TH CROSS

5TH AND 6TH CROSS

7TH AND 8TH CROSS

9TH AND 10TH CROSS

11TH AND 12TH CROSS

13TH AND 14TH CROSS

15TH AND 16TH CROSS

17TH AND 18TH CROSS

19TH AND 20TH CROSS

21ST AND 22ND CROSS

23RD AND 24TH CROSS

25TH AND 26TH CROSS

27TH AND 28TH CROSS

29TH AND 30TH CROSS

31ST AND 32ND CROSS

33RD AND 34TH CROSS

35TH AND 36TH CROSS

37TH AND 38TH CROSS

39TH AND 40TH CROSS

41ST AND 42ND CROSS

43RD AND 44TH CROSS

45TH AND 46TH CROSS

47TH AND 48TH CROSS

49TH AND 50TH CROSS

51ST AND 52ND CROSS

53RD AND 54TH CROSS

55TH AND 56TH CROSS

57TH AND 58TH CROSS

59TH AND 60TH CROSS

61ST AND 62ND CROSS

63RD AND 64TH CROSS

65TH AND 66TH CROSS

67TH AND 68TH CROSS

69TH AND 70TH CROSS

71ST AND 72ND CROSS

73RD AND 74TH CROSS

75TH AND 76TH CROSS

77TH AND 78TH CROSS

79TH AND 80TH CROSS

81ST AND 82ND CROSS

83RD AND 84TH CROSS

85TH AND 86TH CROSS

87TH AND 88TH CROSS

89TH AND 90TH CROSS

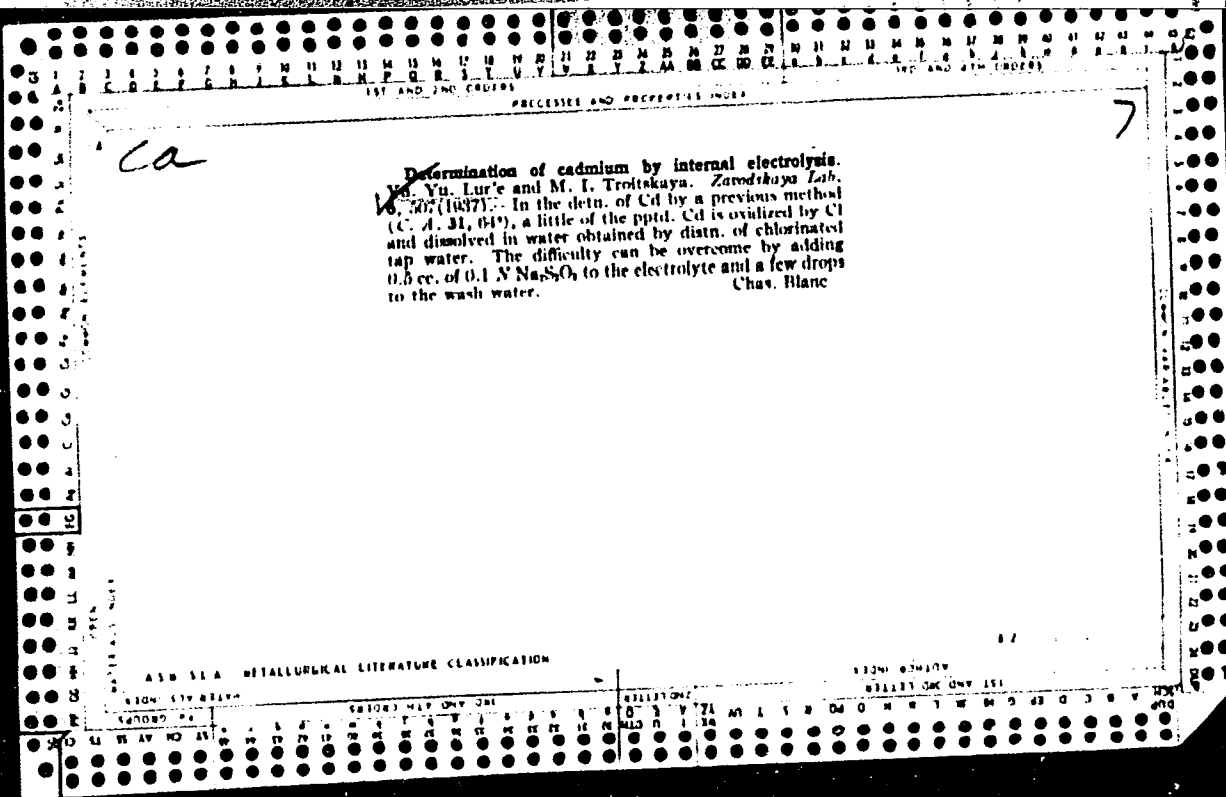
91ST AND 92ND CROSS

93RD AND 94TH CROSS

95TH AND 96TH CROSS

97TH AND 98TH CROSS

99TH AND 100TH CROSS



PROCESSES AND PROPERTIES INDEX

7

CA

Determination of cadmium by internal electrolysis.  
 Yu. Yu. Lur'e. *Zhurnal Khim. 6, 1040(1937)*; cf.  
*C. A. 31, 7780*. Answer to Fogel'ant and Kalmykova,  
*C. A. 32, 759*.  
 Chac Blanc

METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS

COMMON VALENCE INDEX

INTERNAL INDEX

GROUPS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



196 AND 17M GROUPS

PROCESSES AND PROPERTIES INDEX

7

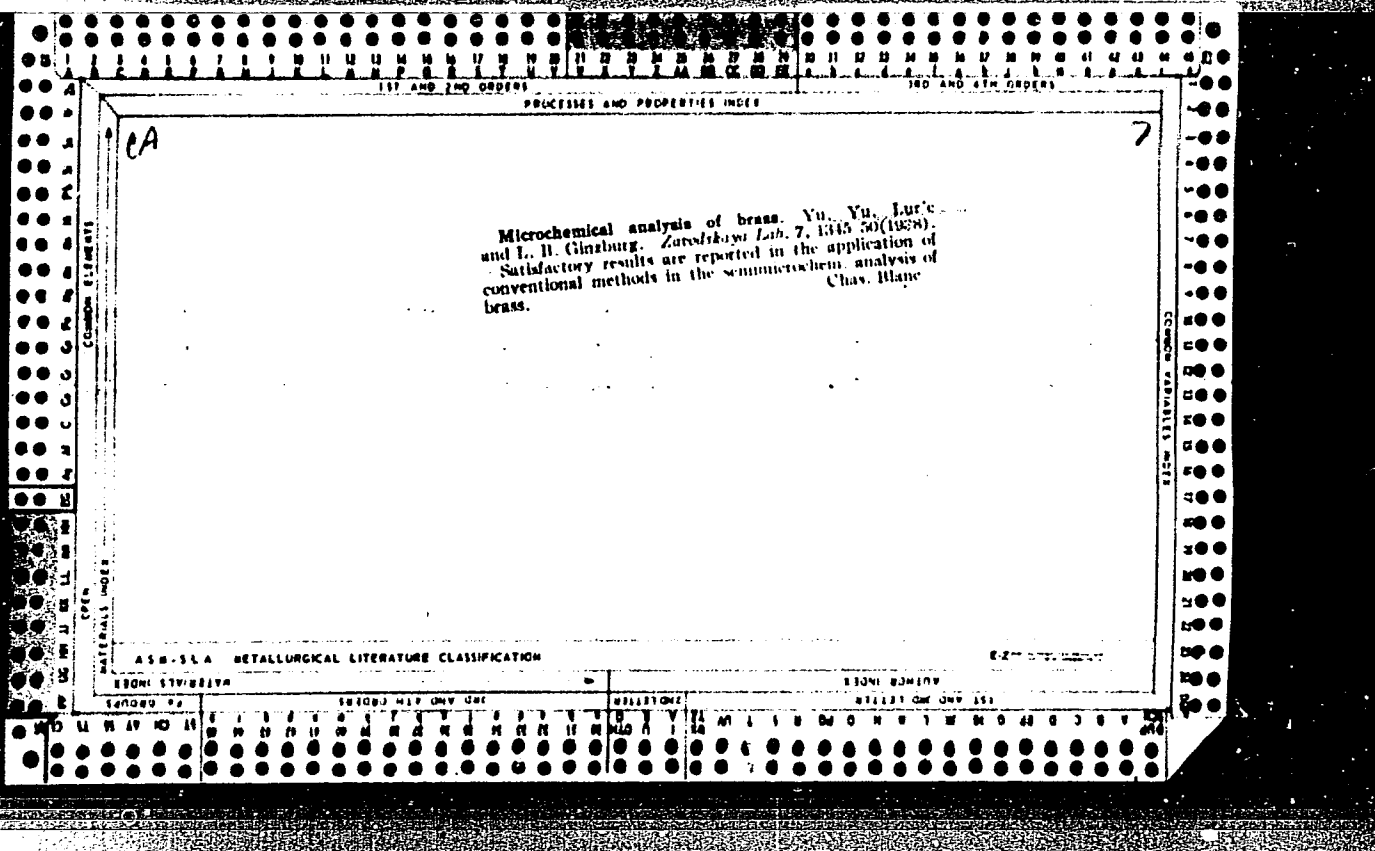
Modern chemical methods of inorganic analysis. I. V. Tamm and Yu. Yu. Iut's. *Zhurnal Khim. 7, 525-8* (1938). A discussion. Chas. Blane

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

196 AND 17M GROUPS

COMMON SUBJECTS INDEX

GROUPS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	JJ	JK	JL	JM	JN	JO	JP	JQ	JR	JS	JT	JU	JV	JW	JX	JY	JZ	KA	KB	KC	KD	KE	KF	KG	KH	KI	KJ	KK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LL	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NN	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM	VN	VO	VP	VQ	VR	VS	VT	VU	VV	VW	VX	VY	VZ	WA	WB	WC	WD	WE	WF	WG	WH	WI	WJ	WK	WL	WM	WN	WO	WP	WQ	WR	WS	WT	WU	WV	WW	WX	WY	WZ	XA	XB	XC	XD	XE	XF	XG	XH	XI	XJ	XK	XL	XM	XN	XO	XP	XQ	XR	XS	XT	XU	XV	XW	XX	XY	XZ	YA	YB	YC	YD	YE	YF	YG	YH	YI	YJ	YK	YL	YM	YN	YO	YP	YQ	YR	YS	YT	YU	YV	YW	YX	YZ	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZI	ZJ	ZK	ZL	ZM	ZN	ZO	ZP	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ
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1ST AND 2ND CODES      3RD AND 4TH CODES

PROCESSES AND PROPERTIES INDEX

7

*cd*

A method of [analysis by] internal electrolysis. Yu. Lav'ev. *Trudy Vsesoyuz. Konferentsii Anal. Khim., Akad. Nauk S. S. R.*, 1, 231-40(1939); *Khim. Referat Zhur.*, 1940, No. 4, 50. The principle of the method is discussed and the app. used is described. W. R. Henn

ASB-114 METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND LETTERS      3RD AND 4TH LETTERS

GROUPS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

151 AND 2ND CROSS

152 AND 2TH CROSS

PROCESSES AND PROPERTIES INDEX

CA

7

Determination of small amounts of cobalt in ores, concentrates and tailings. Yu. Yu. Luz'e and R. M. Tal. *Zashchita Lab. S.* 383-8(1939). - A comparative study of various methods indicates that the nitrite method followed by gravimetric detn. gives higher results and cannot be used. The most accurate method is the nitrite procedure followed by colorimetric detn. The method is, however, too long. The method of preliminary sepn. of Ni and Co by electrolysis without an outside current is not as accurate but it is satisfactory for routine analysis. Direct colorimetric test may give results sufficiently accurate for ordinary needs but it requires the addn. of enough pyrophosphate to bind the Fe as  $NaFeP_2O_7$ . This is the simplest and most rapid method. In case the ratio of Fe/Co is 400 or more the nitrite-colorimetric method is recommended.

B. Z. Kamich

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

151 AND 2ND CROSS

152 AND 2TH CROSS

7

**Microchemical determination of zinc in ores by the mercury thiocyanate method.** Yu. Yu. Euf'e and N. A. Filipova. *Zavodskaya Lab.* 8, No. 10, 11, 1017-52 (1969).

Microchem. detn. of Zn in ores in the presence of Fe, Al, etc., by pptg. with Hg(CNS)<sub>2</sub> is accurate, rapid and requires small amounts of the reagents. It can be bound by citric acid, by fluorides and by phosphates. Optimum results are obtained by binding with fluorides, but the ppt. must be centrifuged. Pptn. with Na phosphate plus H<sub>2</sub>O<sub>2</sub> is the simplest method for macrodetn. To 30 ml. of the soln. obtained by dissolving the ore, add 5 ml. of 1% H<sub>2</sub>O<sub>2</sub> (d. 1.7) and 2 ml. of a soln. of Na phosphate formed by neutralizing H<sub>2</sub>PO<sub>4</sub> with NaOH. Samples contg. 0.28, 0.20% of Zn yielded 0.28, 0.28, 0.27 and 0.28%. The Faler and Krasil'shchikov method for detg. Zn (pptn. with pyridine thiocyanate and pptn. with 8-hydroxyquinoline) gives poor results in the presence of large amounts of Fe and Al, owing to the soly. of ZnP<sub>2</sub>(CNS)<sub>2</sub> in weakly acid solns, and to the slow pptn. in NH<sub>4</sub> tartrate medium. Six references.

W. R. Heim

ASB-SL-6 METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

11

7m

Determination of Very Small Amounts of Antimony in Electrolytic Baths and in Metallic Zinc. Yu. Yu. Lur'o, E. M. Tal, and L. B. Fligel'man (*Zavod. Lab. (Works' Lab.)*, 1939, 8, 1223-1226; *C. Abs.*, 1940, 24, 5778).—[In Russian.] Electrolytic Zn baths contain 0.06-0.1 mg. Sb, 30-300 mg. Fe, 1-2 gm. Mn, 50 gm. Zn, and 0.5-1 gm. As/litre. The Brownson method cannot be used because of the large amounts of Fe and Mn. The determination of Sb by the Blumenthal method (*Met. Abs. (J. Inst. Metals)*, 1928, 40, 591) gives good results if the subsequent precipitation of Sb is carried out on Cu foil and not with H<sub>2</sub>S. The best method for determining small amounts of Sb is by internal electrolysis followed by colorimetric comparison. Add 15 ml. concentrated HCl and 0.5 gm. hydrazine (chloride or sulphate) to 1 litre of the electrolyte, heat to 85°-85° C. and immerse a Cu wire spiral cathode joined to an Fe or Pb anode. Keep the solution at 85°-85° C. for 1 hr., remove the electrodes, disconnect, and wash rapidly in 5% HCl and in water. Add Na<sub>2</sub>O<sub>2</sub> to dissolve all the Sb and determine colorimetrically. In the absence of As the electrolysis proceeds slowly and in determining Sb in metallic Zn it is necessary to add 1 mg. As (as salt) before the electrolysis.

ASS 51A METALLURGICAL LITERATURE CLASSIFICATION

7

*CR*

Determination of lead in the presence of large amounts of barium. Yu. Yu. Lur'e and G. A. Taratorin. *Zarodskaya Lab.* 9, 522 7 (1940).— In detg. Pb in the presence of large amts. of Ba the treatment with H<sub>2</sub>SO<sub>4</sub> followed by evapn. to dryness is not permissible. In analyzing sulfide ores the evapn. to dryness with only HNO<sub>3</sub> or aqua regia should not be carried out because H<sub>2</sub>SO<sub>4</sub> is formed. In both cases the cryst. lattice of the BaSO<sub>4</sub> is destroyed and some of the Ba ions go into soln. On subsequent diln. with water the spar crystals are again covered with layers of BaSO<sub>4</sub> with the resultant occlusion of Pb, which cannot be extd. by solvents. Accordingly, two methods of detg. Pb have been developed. In the chloride-chromate method dissolve 0.5 g. of the concentrate (2 g. of ore or 5 g. of tailings) in 10-20 ml. HCl, heat for 5 min., add 5 ml. HNO<sub>3</sub> and 3 g. NaCl, evap. to dryness, cool, add 5 ml. HCl and 50 ml. water and heat to boiling. Cool to room temp., add 10-20 ml. of 5% citric or tartaric acid and neutralize with NH<sub>3</sub> to litmus. Add 5 ml. comd. HOAc, boil for not over 5 min. and filter and wash. Dissolve the ppt. in the filter, dil. to 150 ml., add 1-1.5 g. KI and titrate with thiosulfate. In the electrolytic method, dissolve 0.5 g. of concentrate or 2 g. of ore in 15 ml. HNO<sub>3</sub>, add 10 ml. of neutral soln. of Cu(NO<sub>3</sub>)<sub>2</sub> corresponding to 1 g. Cu and electrolyze with Fisher electrodes. In the case of oxidized ores and tailings treat 2 g. and 5 g., resp., first with 10 ml. HCl and then with 10 ml. HNO<sub>3</sub>, evap. to 5 ml., add 3 g. NH<sub>4</sub>NO<sub>3</sub> and evap. to dryness. To the dry residue add 5 ml. HNO<sub>3</sub>, evap. to dryness, add 3 ml. HNO<sub>3</sub>, 20 ml. hot water, boil 5 min., dil. with hot water to 100 ml., add neutral Cu(NO<sub>3</sub>)<sub>2</sub> and electrolyze. B. Z. Kamich

COMMON ELEMENTS

1ST AND 2ND COORDS

PROCESSES AND PROPERTIES INDEX

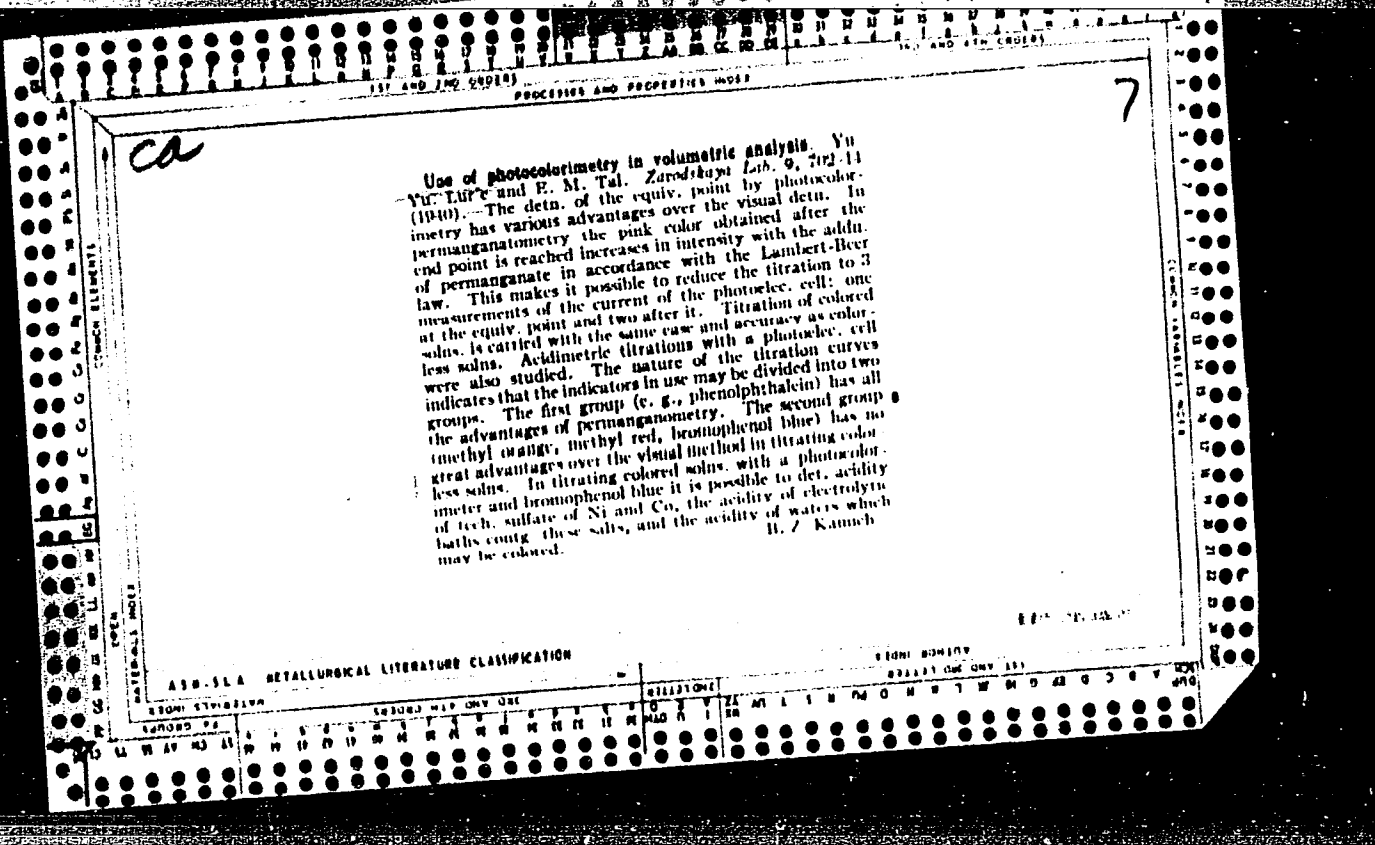
100 AND 2TH COORDS

COMMON VARIABLE INDEX

ABB-3LA METALLURGICAL LITERATURE CLASSIFICATION

REGION NUMBER

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100





1ST AND 2ND ORDERS

1ST AND 4TH ORDERS

COMMON ELEMENTS

COMMON ELEMENTS

CH

7

Determination of xanthates and aerofloat in the waste waters of concentrators. Xu Yu Jue. *Zhongguo Yaoxue* 10, 1177 (1911). In 10-200 ml. of waste water add 3 ml. of toluene and 50 ml. of buffer soln. (1 l. of HOAc and 25.3 g. of NaOAc) in 5-10-ml. portions. After each addn. of the buffer soln. shake thoroughly. Allow the liquids to sep., discard most of the lower layer, and transfer the rest to a Nessler cylinder. Add 50 ml. of the buffer soln. to another Nessler cylinder, add 3 ml. of toluene, and titrate dropwise with a standard xanthate soln. (1 ml. = 0.1 mg. of xanthate) and shake thoroughly after each addn. of the reagent until the color of the toluene layers in both cylinders is the same. The sensitivity of the method is reduced by using phosphate buffer or 0.3 M tartaric acid for decomposing the xanthate. Aerofloat (ROPS(SNa)<sub>2</sub> or ROPO(SNa)<sub>2</sub>) is detd. similarly. The decompn. of the aerofloat was accomplished by acetic-acetate buffer and by a buffer mixt. of K<sub>2</sub>HPO<sub>4</sub> + KH<sub>2</sub>PO<sub>4</sub>. It is possible to det. 0.005 mg. of xanthate or aerofloat in the sample. B. Z. Kamich

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNONYMS

INDEXED

RESEARCH

RESEARCH

CA 7

PROCESSES AND PROPERTIES INDEX

Determination of thiocyanates in waste waters and other dilute solutions. Yu. Yu. Lur'e, *Zarodskaya Lab.* 11, 273-8(1945).—The method developed for the detn. of small quantities of thiocyanates in waste waters and other dil. solns. is based on a preliminary sepn. of CNS<sup>-</sup> together with Cl<sup>-</sup> and Cn<sup>-</sup> by AgNO<sub>3</sub>, purification of the residue from impurities of org. substances, decompn. of Ag salts, and colorimetric detn. of CNS<sup>-</sup> in the form of the complex salt with Cu and pyridine. The method is very accurate. Add several drops of 1% NaCl soln. and

10 15 ml. of 1 N AgNO<sub>3</sub> to 500 ml. of the sample, filter after 4 hrs., wash the ppt. on the filter successively with small portions of water, alc., toluene, alc., and water, transfer the ppt. and filter to a 100-ml. flask, add 20 ml. of water satd. with H<sub>2</sub>S, let stand on a boiling water bath for 30 min. with const. mixing, filter off the Ag<sub>2</sub>S, wash it with water, and evap. the filtrate to 5-10 ml. Transfer the soln. to an Eggert's test tube, add 3 ml. of 5% NH<sub>4</sub>NO<sub>3</sub>, 0.5 ml. of pyridine, 0.5 ml. of 10% CuSO<sub>4</sub>, and 3 ml. of CHCl<sub>3</sub>, and shake vigorously. Add 5-10 ml. of pure water and the same quantities of all the reagents used for the sample to a similar test tube and titrate with a standard KCNS soln. until the colors of the CHCl<sub>3</sub> layers match.

W. R. Henn

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

GROUPS

ALPHABETIC INDEX

ALPHABETIC INDEX

1ST AND 2ND ORDERS PROCESSED AND PROPERTIES INDEX

14

**Determination of petroleum products in natural and waste waters.** Yu. V. Larin and V. A. Shcherbakov.

Zhurnal Lab. 11, 305 (1945). Est. 25-30 ml depending on the content of petroleum products of sample with 20 ml. of Et<sub>2</sub>O, repeat the extr. 5-6 times with 10-15 ml. portions of Et<sub>2</sub>O, combine the extr., dry over CaCl<sub>2</sub>, put into a distg. app. (constructed by blowing a 2-ml. bulb in the narrow end of a CaCl<sub>2</sub> tube and connecting the wide end of the tube to a fractionating column and condenser), distil off the solvent until the liquid level is below the mark (2 ml.), discontinue the heating, and add ether exactly to the mark. Introduce 20-30 ml. of 0.1% gelatin soln. into a turbidimeter cylinder, transfer the contents of the bulb into this soln. by means of 10 ml. of 90% alc., and fill the cylinder to the mark (50 ml.) with the gelatin soln. Compare the turbidity with that of a standard prepd. from 37 ml. of 0.1% gelatin soln., 1 ml. of an alc. kerosene soln., 10 ml. of alc. and 2 ml. of ether, and mix. The content of petroleum products is given by  $\frac{t}{s} \times 100$ ,  $t$  is the quantity of kerosene added to the standard soln. in the turbidimeter cylinder,  $s$  the height of the column of the sample soln.,  $P$  the vol. of water used for the analysis. The somewhat lower results obtained (from -1.3 to -4.7%, or approx. 10% relative) are attributed partly to the fact that the turbidity in the cylinder does not obey Beer's law exactly and partly to the incomplete extr. of petroleum products by ether. W. R. St.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

33041 DIVISION

RECORD - 17 ONLY USE

ILLUSTRATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

117 AND 120 CROSS REFERENCE INDEX

120 AND 121 CROSS REFERENCE INDEX

PROCESS AND PROPERTIES INDEX

CA 7

Common (Literary)

Common (Technical)

Application of the photocolormeter in volumetric analysis. III. Titration to maximum turbidity. Xu, Ya-Lu<sup>2</sup> and R. M. Tai. *Zhuravskaya Lab.* 11, 788-90 (1945); cf. *C.A.* 40, 2408<sup>7</sup>.—When a photocolormeter is used in detns. of the end point of titration of Pb with (NH<sub>4</sub>)<sub>2</sub>MoO<sub>4</sub> by max. turbidity, the max. may appear either before or after the equiv. point. A coincidence of max. turbidity with the equiv. point can be obtained by adding gelatin to the soln. and by taking a sample sufficient in size to make the content of Pb in the soln. equal to 0.8-8.0 mg. Under these conditions the method is accurate and is applicable for large-scale analysis of ores and of their enrichment products. Phototurbidimetric detn. of Zn by K<sub>2</sub>Fe(CN)<sub>6</sub> requires no addn. of stabilizer to the soln. Owing to the slowness of the reaction in the cold, the method can be used only if the titrated soln. can be heated during the titration. W. R. Henn

ASP-51A METALLURGICAL LITERATURE CLASSIFICATION

12000 12100 12200 12300 12400 12500 12600 12700 12800 12900 13000 13100 13200 13300 13400 13500 13600 13700 13800 13900 14000 14100 14200 14300 14400 14500 14600 14700 14800 14900 15000 15100 15200 15300 15400 15500 15600 15700 15800 15900 16000 16100 16200 16300 16400 16500 16600 16700 16800 16900 17000 17100 17200 17300 17400 17500 17600 17700 17800 17900 18000 18100 18200 18300 18400 18500 18600 18700 18800 18900 19000 19100 19200 19300 19400 19500 19600 19700 19800 19900 20000 20100 20200 20300 20400 20500 20600 20700 20800 20900 21000 21100 21200 21300 21400 21500 21600 21700 21800 21900 22000 22100 22200 22300 22400 22500 22600 22700 22800 22900 23000 23100 23200 23300 23400 23500 23600 23700 23800 23900 24000 24100 24200 24300 24400 24500 24600 24700 24800 24900 25000 25100 25200 25300 25400 25500 25600 25700 25800 25900 26000 26100 26200 26300 26400 26500 26600 26700 26800 26900 27000 27100 27200 27300 27400 27500 27600 27700 27800 27900 28000 28100 28200 28300 28400 28500 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78400 78500 78600 78700 78800 78900 79000 79100 79200 79300 79400 79500 79600 79700 79800 79900 80000 80100 80200 80300 80400 80500 80600 80700 80800 80900 81000 81100 81200 81300 81400 81500 81600 81700 81800 81900 82000 82100 82200 82300 82400 82500 82600 82700 82800 82900 83000 83100 83200 83300 83400 83500 83600 83700 83800 83900 84000 84100 84200 84300 84400 84500 84600 84700 84800 84900 85000 85100 85200 85300 85400 85500 85600 85700 85800 85900 86000 86100 86200 86300 86400 86500 86600 86700 86800 86900 87000 87100 87200 87300 87400 87500 87600 87700 87800 87900 88000 88100 88200 88300 88400 88500 88600 88700 88800 88900 89000 89100 89200 89300 89400 89500 89600 89700 89800 89900 90000 90100 90200 90300 90400 90500 90600 90700 90800 90900 91000 91100 91200 91300 91400 91500 91600 91700 91800 91900 92000 92100 92200 92300 92400 92500 92600 92700 92800 92900 93000 93100 93200 93300 93400 93500 93600 93700 93800 93900 94000 94100 94200 94300 94400 94500 94600 94700 94800 94900 95000 95100 95200 95300 95400 95500 95600 95700 95800 95900 96000 96100 96200 96300 96400 96500 96600 96700 96800 96900 97000 97100 97200 97300 97400 97500 97600 97700 97800 97900 98000 98100 98200 98300 98400 98500 98600 98700 98800 98900 99000 99100 99200 99300 99400 99500 99600 99700 99800 99900 100000

130 AND 134 COLUMNS

PROCESSES AND PROPERTIES INDEX

**F** 2090. DETERMINATION OF SMALL CONCENTRATIONS OF CHLORIDES. ANALYSIS  
 OF FEED WATER FOR RAMZIN STEAM BOILERS. Lur'e, Y. X. and Nikoleva,  
 Z. V. (Zavodskaya Lab., 1946, 12, 161-70; Chem. Abstr., 1946, 42, 1370).

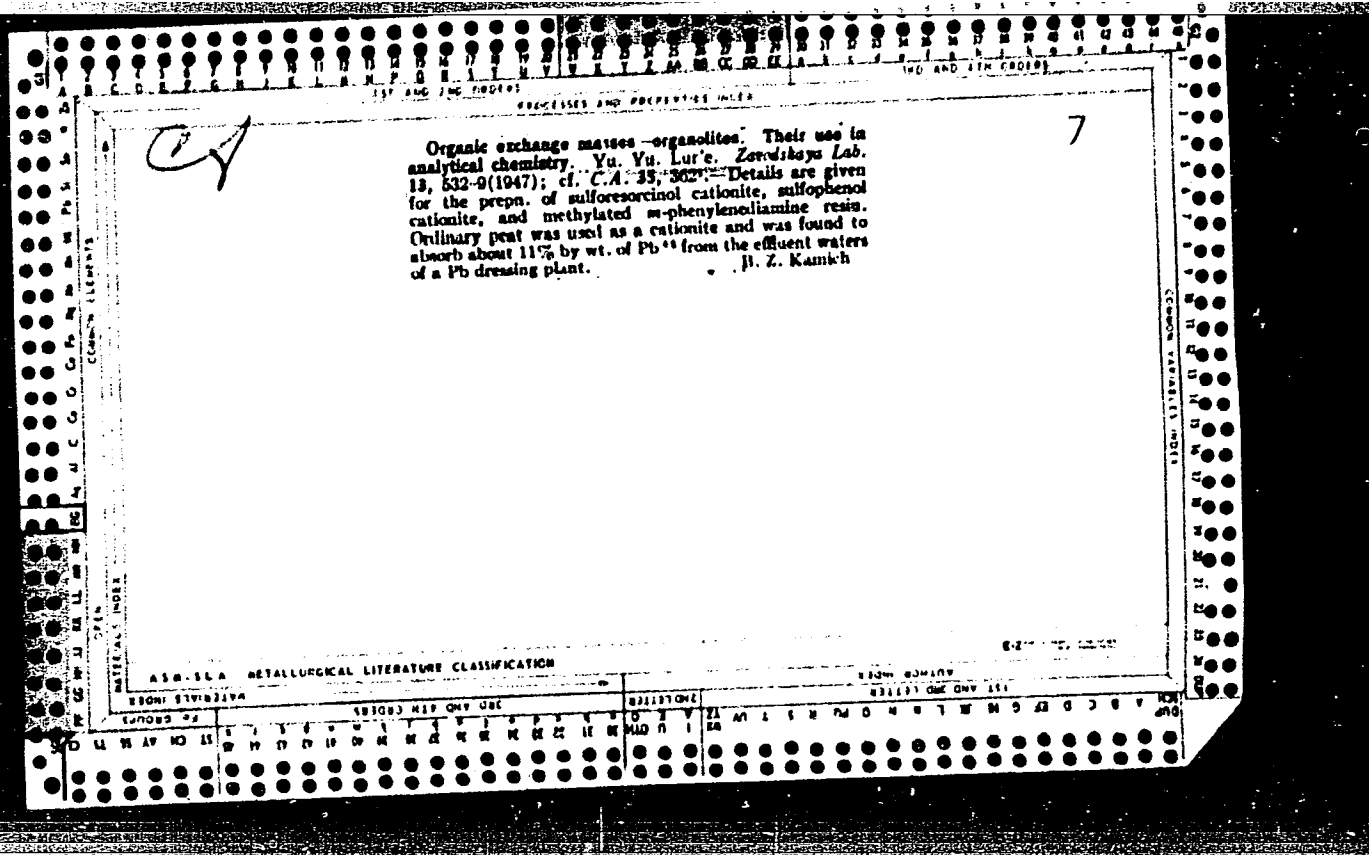
A colorimetric method for very small concentrations of Cl<sup>-</sup> is based on the suppression of Cl<sup>-</sup> in the reactions between Hg<sup>+</sup> and diphenylcarbaside. The colours obtained obey the Lambert-Beer law within the limits of concentrations studied. The determination can be completed either by the colour scale method or by the equilibrium method. The colour is stable for 5-30 min. and is not affected by small concentrations of NH<sub>3</sub> that may be present in the water. The solution should be preliminarily neutralized if the content of NH<sub>3</sub> exceeds 12 mg./l. The method is accurate and sensitive. The minimum detectable concentration of Cl<sup>-</sup> is 0.025 mg./l. No colours were obtained in strongly acid solutions. Best results were obtained at pH 4. The content of up to 0.5 mg. of Fe per l. does not interfere with the determination. Another colorimetric method studied for the determination of Cl<sup>-</sup> is based on the reaction  $Ag_2CrO_4 + 2 Cl^- \rightleftharpoons 2 AgCl + CrO_4^{2-}$ . The CrO<sub>4</sub><sup>2-</sup>

130 AND 134 COLUMNS

METALLURGICAL LITERATURE CLASSIFICATION

COLUMNS

formed in the solution can be determined colorimetrically. The  $\text{CrO}_4^{2-}$   
diphenylcarbazide method is as accurate as the method with  $\text{Hg}^{2+}$   
but is more cumbersome.





PROCESSING AND RECEPTIONS AREA

CA

7

**Use of organites in analytical chemistry. I. Yu. Yu. Lur'e and N. A. Filippova. *Zhurnal Khim. Fiz.* 33:47(1947).—Expts. show that a dil. soln. of Ni, Co, and Cu salts can be enriched by means of cationites by about 40 times or more. The loss of metal in the total cycle of absorption and regeneration amounts to 1-2%. It is possible to use cationites for quant. sepn. of amphoteric metals from anions and nonamphoteric cations by absorbing them with cationite and then extg. with alkali solns. In this manner it is possible to sep. Sb, Mo, W, Zn, and Al from all the elements which form basic hydroxides (Fe, Cu) and from As which remains with the other anions as an arsenite ion. This method has the advantage when compared with the use of alkali hydroxide for the sepn. because it eliminates co-pptn. and makes possible a quant. sepn. of the amphoteric metals.**

B. Z. Kaulich

METALLURGICAL LITERATURE CLASSIFICATION

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
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PROCESSING AND PROPERTIES INDEX

14

CA

Use of organo... in the analysis of water. Yu. Yu. Lur'e and S. N. Stefanovich. *Zashchita Lab.* 13, 660-3 (1947) (in Russian); cf. C.A. 42, 4484b.—Cation organo- lites are used to eliminate Ca and Mg in natural and sewer water. Estd. Ca and Mg are recovered by adding HCl (1:0) and (1:4), resp. Loss in extrn. is approx. 2%. Sulfate ion is detd. by titrating the filtrate with 0.1 N NaOH (methyl orange indicator). . . . George A. Leacisin

ASB-ISA METALLURGICAL LITERATURE CLASSIFICATION

STONY BOWLING

GENERAL INDEX

INTERNAL INDEX

EXTERNAL INDEX

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

5TH AND 6TH ORDERS

7TH AND 8TH ORDERS

9TH AND 10TH ORDERS

11TH AND 12TH ORDERS

13TH AND 14TH ORDERS

15TH AND 16TH ORDERS

17TH AND 18TH ORDERS

19TH AND 20TH ORDERS

21ST AND 22ND ORDERS

23RD AND 24TH ORDERS

25TH AND 26TH ORDERS

27TH AND 28TH ORDERS

29TH AND 30TH ORDERS

31ST AND 32ND ORDERS

33RD AND 34TH ORDERS

35TH AND 36TH ORDERS

37TH AND 38TH ORDERS

39TH AND 40TH ORDERS

41ST AND 42ND ORDERS

43RD AND 44TH ORDERS

45TH AND 46TH ORDERS

47TH AND 48TH ORDERS

49TH AND 50TH ORDERS

51ST AND 52ND ORDERS

53RD AND 54TH ORDERS

55TH AND 56TH ORDERS

57TH AND 58TH ORDERS

59TH AND 60TH ORDERS

61ST AND 62ND ORDERS

63RD AND 64TH ORDERS

65TH AND 66TH ORDERS

67TH AND 68TH ORDERS

69TH AND 70TH ORDERS

71ST AND 72ND ORDERS

73RD AND 74TH ORDERS

75TH AND 76TH ORDERS

77TH AND 78TH ORDERS

79TH AND 80TH ORDERS

81ST AND 82ND ORDERS

83RD AND 84TH ORDERS

85TH AND 86TH ORDERS

87TH AND 88TH ORDERS

89TH AND 90TH ORDERS

91ST AND 92ND ORDERS

93RD AND 94TH ORDERS

95TH AND 96TH ORDERS

97TH AND 98TH ORDERS

99TH AND 100TH ORDERS

BABKO, Anatoliy Kirillovich; PYATNITSKIY, Igor' Vladimirovich; ALIMARIN, I.P.,  
redaktor; DYMOV, A.M., professor, redaktor; LUR'YE, Yu.Yu., professor,  
redaktor; FILIPPOVA, H.A., redaktor; LUR'YE, M.S., tekhnicheskiy  
redaktor

[Quantitative analysis] Kolichestvennyi analiz. Moskva, Gos. nauchno-  
tekh. izd-vo khim. lit-ry, 1956. 736 p. (MLRA 9:11)

1. Chlen-korrespondent AN SSSR (for Alimarin)  
(Chemistry, Analytical--Quantitative)

LUR'YE, YU., YU., Prof.

USSR/Chemistry - Analysis  
Chemistry - History

Nov 1947

"Soviet Analytical Chemistry for Thirty Years," Prof <sup>A</sup>u. A. Klyachko, Prof M. L. Chapelevetakiy, Prof <sup>A</sup>u. Yu. Lur'ye, 9 $\frac{1}{2}$  pp

"Zavodskaya Laboratoriya" Vol XIII, No 11

Analytical chemistry developed from the science of applied chemistry has served well in the development of the industries and agriculture of the Soviet Union. Article presents general facts concerning the development of national economy and analytical chemistry in the Soviet Union, and names some of the people most responsible for the remarkable development during the Soviet regime. Last part of the article consists of a general discussion of the future of Soviet analytical Chemistry with respect to further industrial achievements. Greater development of new fields such as molecular physics, electron optics, radio chemistry, geochemistry, etc., is recommended.

PA 36T10

111 AND 110 CODES  
111 AND 110 CODES  
111 AND 110 CODES

COMMON ELEMENTS  
COMMON ELEMENTS

15

A New Variation of the Cyanic Method of the Determination of Molybdenum. (In Russian.) L. B. Ginzburg and U. U. Lurya. *Zavodskaya Laboratoriya* (Factory Laboratory), v. 13, July 1948, p. 538-546.

Discusses a new variation of the cyanic method of photocolometric determination of molybdenum, with applications as a reducing agent for potassium iodide. This does not differ from the old method in application to stannous chloride, in respect to degree of sensitivity and range of colorimetry, but does differ in having a shorter period of coloration and in degree of stability.

A.S.B.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION  
KODIRI BOMIRU

147026  
11 10 9 8 7 6 5 4 3 2 1  
S O M N A V NO 15  
W W Q P O R A E R R K K X X H H M  
U S Y T Z A W T S R D O N U T W H S G Z C O Y  
K O L P I K A

LUR'YE, Ya. Yu.

PA 3/49T21

USSR/Chemistry - Cyanides, Determination of Aug 48  
Chemistry - Analysis

"Determination of Small Concentrations of Cyanides  
in the Presence of Inhibiting Substances," Ya.  
Yu. Lur'ye, Z. V. Nikolayeva, Inst Vodgeo, 8 pp

"Zavod Lab" Vol XIV, No 8

Existing methods of analysis cannot be applied  
to determine cyanides in dilute solutions  
containing simple and complex cyanides, thio-  
cyanides, sulfides, organic compounds, etc.  
Authors describe their own method.

3/49T21

7

**Use of organolites in analytical chemistry. III. Yu. Yu. Lar' and N. A. Filippova (State Inst. Non-Ferrous Metals, U.S.S.R.). *Zashchita Lab.* 14, 180-72 (1948); cf. C.A. 43, 4184k. -Cation-exchange expts. were conducted with phenolic cationite (Wofalit P). The following seps. can be made: (1) Zn and Al from Pb by selective extn. with NaOH from the NH<sub>4</sub><sup>+</sup>-sulf. cationite. (2) Sb and Sn from As by passing the soln. through H<sup>+</sup>-sulf. cationite to absorb Sb and Sn only and then extg. with dil. HCl. (3) Bi from Cu or Pb by passing the soln. through a H<sup>+</sup>-sulf. cationite to absorb both then extg. Bi with 1% KI soln. (acidified with H<sub>2</sub>SO<sub>4</sub> to give 0.1 N concn.) and detg. of cationite provided the thiocyanate concn. is exactly 0%; if all Bi is to remain in soln. and an insignificant amt. of Sb is allowable, the concn. should be above 0%; if all Sb is to be extd. and a little Bi is permissible, the concn. should be below 0%. Anion-exchange expts. were conducted with guanidine anionite. In acid soln. MnO<sub>4</sub><sup>-</sup> is reduced to Mn<sup>2+</sup> and passed into the filtrate; in neutral or alk. soln. MnO<sub>4</sub><sup>-</sup> is reduced to MnO<sub>2</sub> which ppt. on the anionite grains from which it can be extd. with H<sub>2</sub>SO<sub>4</sub>. CrO<sub>4</sub><sup>2-</sup> is absorbed by anionite from a soln. of pH 1-12 and can be extd. with 2% NaOH soln. To sep. CrO<sub>4</sub><sup>2-</sup> from Ni<sup>2+</sup> in solns. in which Ni:Cr is as high as 60:1, pass the ammoniacal soln. 3 times through the anionite, add a drop of perhydrol before the 2nd and 3rd filtration to oxidize any Cr<sup>3+</sup>, and ext. CrO<sub>4</sub><sup>2-</sup> with 2% NaOH soln. In the presence of iodide or thiocyanate Bi is satisfactorily absorbed both in acid and ammoniacal soln.; the absorbed complex ion can be extd. with 2% NaOH soln. In the presence of iodide, Sb is satisfactorily absorbed only in an acid soln.; in an ammoniacal soln. only 2% is absorbed, the complex ion can be extd. with 2% NaOH soln. In the presence of oxalic acid, Sn is absorbed from HCl soln.; there is no sepn. of Sb from Sn under these conditions because Sb is absorbed to some extent. To sep. Bi from Cu in soln. in which Cu:Bi is as high as 250:1, add iodide or thiocyanate, and NH<sub>4</sub>OH to change all Cu into ammoniacal complex, pass through anionite, ext. Bi from anionite with NaOH, and det. Bi. Z. Kamich**

ASB-114 METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND COLS.      1ST AND 4TH COLS.

PROCESSES AND PROPERTIES INDEX

7

New variation in the thiocyanate determination of molybdenum. L. B. Ginsburg and Yu. Yu. Lar'c, *Zarodskaya Lab.* 14, 538-45(1948).—Dissolve 0.1-0.5 g. of sample in 10-15 ml. of aqua regia. To the soln. add 10 ml. of 18 N H<sub>2</sub>SO<sub>4</sub> and evap. to fumes. Cool, add 25 ml. of water, and boil to dissolve all sulfates. Dil. to 100 ml. in a volumetric flask, mix, and use an aliquot contg. 0.06-0.8 mg. of Mo. Transfer to a 50-ml. graduated cylinder. Add in the following sequence, mixing after each addn., 35 ml. of 3 N HCl + 3 ml. of 20% KCNS soln. + 1 g. KI + 1 ml. of freshly prepd. 1% Na<sub>2</sub>SO<sub>4</sub> soln. Dil. to 50 ml. with 3 N HCl and after 10 min. measure the color at 520-580 mμ. Run a blank on the reagents.

G. M. Kosolapoff

A 58-31A METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX	COMMON ELEMENTS	PROCESSES AND PROPERTIES INDEX	METALLURGICAL LITERATURE CLASSIFICATION	1ST AND 2ND COLS.	1ST AND 4TH COLS.



PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

7

*4*

**Detn. of small concns of cyanides in the presence of interfering substances.** Yu. Yu. Luta and Z. V. Nikolaeva. *Zavodskaya Lab.* 14, 925-33 (1948).—Det. the total cyanide content by pptg. with  $AgNO_3$  and treating the ppt. with water and  $H_2SO_4$ , distg. into 1%  $NaOH$ , and detg. the CN content of the distillate either isometrically or colorimetrically with ferric acid soln. To det. the CN present as a simple salt, expel the  $HCN$  by  $CO_2$  and collect it in a receiver contg. a measured vol. of 0.01 N I soln. followed by a contg. a known vol. of standard  $Na_2S_2O_3$ . The contents of the 2 receivers are eventually mixed and the excess  $Na_2S_2O_3$  is titrated with 0.01 N I soln. From the difference between the total cyanide and the simple cyanide, the content of complex cyanide is known.  
G. M. Kosolapoff

METALLURGICAL LITERATURE CLASSIFICATION

SERIALS SECTION

RELEASE DATE: MAY 1951

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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LUR'YE, YU. YU.

PA 4/49T16

USSR/Chemistry - Analysis  
Chemistry - Sorption

Feb 48

"Various Methods of Utilizing Chemosorbents for  
Analytical Purposes," Yu. Yu. Lur'ye, 2 pp

"Zavod Lab" Vol XIV, No 2

Describes own method, in which liquid to be analyzed  
is mixed with sorbent instead of being filtered  
through it as in Yu. M. Kostrikin's method. Editors  
ask laboratories to report on their experience with  
both methods.

4/49T16

15

PROCESSES AND PROPERTIES INDEX

Investigation of Colorimetric Methods of Bismuth Determination. (In Russian.) Yu. Yu. Lur'el and L. B. Ginzburg. *Zavodskaya Laboratoriya* (Factory Laboratory), v. 15, Jan. 1949, p. 21-30.

Comparatively analyzes existing methods for the above in ores. Data are charted and tabulated.

430.56.4 METALLOGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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15

13

**Application of Ion-Exchange Materials in Analytical Chemistry. IV. Determination of Sulfur, Phosphorus, and Arsenic in Nickel and Copper. (In Russian.)**  
 Yu. Yu. Lur'e and N. A. Filippova. *Zavodskaya Laboratoriya (Factory Laboratory)*, v. 15, July 1949, p. 771-779.

Develops conditions for absorption of Cu and Ni from weakly acidic solutions, thus permitting determination of S, P, and As in these metals by well-known methods. Two variations of the colorimetric determination of As and P are described. Typical data are tabulated.

ASM-51A METALLURGICAL LITERATURE CLASSIFICATION

INDEX AND 4TH ORDER

INDEX AND 4TH ORDER

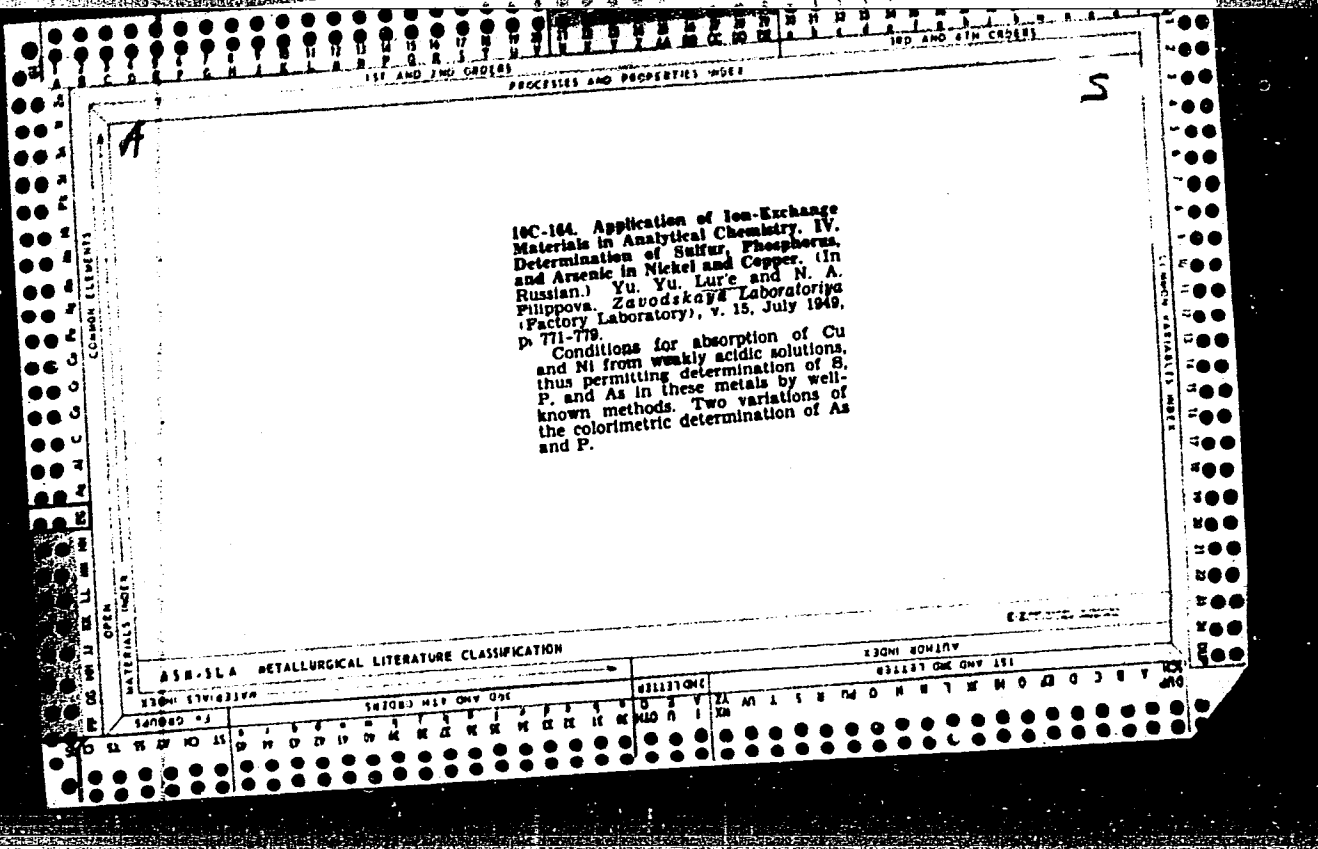
INDEX AND 4TH ORDER

94

M

\*Investigation of Colorimetric Methods of Determining Bismuth. Yu. Yu. Lur'e and L. B. Ginzburg (*Zavod. Lab.*, 1949, 18, (1), 21-30).—[In Russian]. A comparison is made of the KI, rhodamide, and thiourea methods of colorimetric quantitative determination of Bi in the presence of Pb, Sb, Sn, As, Cu, and Fe. The first method is described briefly, the two others in detail. A violet-light filter with max. permeability in the range 400-470 m $\mu$ , corresponding to max. extinction by Bi-complexes, is used in all these methods; the formation of coloured Bi-complexes occurs in 1-2N-H<sub>2</sub>SO<sub>4</sub>, 1-3.5N-H<sub>2</sub>SO<sub>4</sub>, and 0.4-1.2N-HNO<sub>3</sub>, respectively. The sensitivities of the three methods decrease in the order 8-11-22  $\times 10^3$   $\gamma/cm^2$ , where  $\gamma$  is the concentration (mg./l.)  $\times$  thickness of colorimetric layer (cm.); the ranges of error <1% are 2.6-13.5, 6-20, and 5.2-20  $\gamma/cm^2$ , respectively, so that for low concentration only the KI method gives sufficient precision, and for high concentration only the other two. Coloration occurs in all cases immediately upon addition of the complex-forming reagent and remains stable for 3-4 hr. in the KI, and for 100 min. in the other two methods. Several ways of preventing the formation and/or of taking into account the effects of coloured complexes by Sb, Pb, &c., are mentioned, and the analytical techniques are described in detail. The KI method is the most precise of the three and has the widest range of application, but if Pb is present in large quantities only the thiourea method can be used.—T. O. L.

Dec. 1950



CA

14

Determination of pH in drainage water with organic solvents. Yu. Yu. Lur'e and A. V. Evlanova. *Zavodskaya Lab.* 15, 900-5(1949).—The equil. of the various forms of indicators in a 2-phase system of water-iso-AmOH with respect to H-ion concn. in the org. layer depends not only on initial pH of the aq. layer but also on solutes present. However, since the disoen. consists of acids and salts used for the common buffer solns. are close to those of  $H_2CO_3$  and  $HCO_3^-$ , the results are accurate. The water pH detn. is done on 2 ml. samples by addn. of 6 drops of indicator and 1.5 ml. iso-AmOH, shaking and comparing the color with standard buffer solns. also in presence of iso-AmOH. Recommended indicators: 0.1% alc. Thymol Blue (pH 0.95-5.0), 0.1% alc. Bromophenol Blue (4.0-7.6), 0.5% alc. rosolic acid (6.4-13.0). G. M. K.

All-Union Sci. Res. Inst. Water Supply, Sewer Systems,  
Hydraulic Exp. Constr. and Exp. Hydrogeol.

C.A.

14

Comparison of various methods of determination of free chlorine and chloramines in water. Yu. Yu. Lut'e and Z. V. Nikolaeva. *Zarodskaya Lab.* 16, 701-9(1950). The iodometric, methyl orange, arsenite-toluidine, and *p*-aminodimethylaniline methods give, with sufficient accuracy, the location of the inflection point on the curve of Cl absorption by H<sub>2</sub>O (in water-purification techniques). The methyl orange method is recommended for this detn. The results of the detn. of Cl and chloramines by these methods are close but do show small deviations owing to instability of the system being analyzed. In the last 2 methods HNCI<sub>2</sub> causes part of the result to be called as free Cl and part as chloramine. The methyl orange method gives a sharp differentiation between these 2 detns. Use of it along with the iodometric method permits accurate detn. of free Cl and total of chloramines.

G. M. Kosolapoff

all-Union Sci. Res. Inst. Water Supply, Sewerage, Hydrotech Const, and  
 Exp. Hydrogeol.



LUR'YE, Yu. Yu.

Aug 50

USSR/Chemistry - Analysis, Nickel

"Determination of Small Quantities of Zinc in Pure Nickel," N. A. Filippova, Yu. Yu. Lur'ye, State Sci Res Inst of Nonferrous Metals

"Zavod Lab" Vol XVI, No 8, pp 912-917

Suggest new method for determination of very small quantities, 1000 ths of 1%, of zinc in pure nickel. Method is based on preliminary separation of zinc with acridine and thiocyanate and subsequent colorimetric determination of zinc with the aid of dithizone.

PA169T5

CA

14

Colorimetric determination of calcium and potassium in natural waters. Yu. Yu. Luf'e and Z. V. Nikol'seva. *Zhurnal Obshch. Khim.* 18, 1038 (1946). Ca is detd. by pptn. as  $\text{CaK}_2(\text{Ni}(\text{NO}_2)_6)$  followed by detn. of  $\text{NO}_2$  in the ppt. by Griess' method (sulfamic acid and  $1\text{-C}_6\text{H}_7\text{NH}_2$  in  $30\%$  AcOH used for color development). K is detd. similarly, on the basis of  $\text{NO}_2$  detn. in the above ppt., or on the basis of dimethylglyoxime detn. of Ni in the ppt. G. M. K.

LUR YE, YU YU

Secondary processes occurring during ion exchange on  
ion-exchange resins. Yu. Yu. Lur's and E. S. Peremy-  
nova. *J. Appl. Chem. U.S.S.R.* 27, 1143-7 (1954) (Engl.  
translation).—Sec C.A. 49, 7923a. B. M. R.

2 may

10

LUR'YE, Yu. Yu.

## USSR.

Secondary processes occurring during ion-exchange on ion-exchange resins. Yu. Yu. Lur'e and E. S. Peremylova. *Zhur. Priklad. Khim.* 27, 1207-12 (1954).—Sols. of  $\text{Ag}^+$  (5 mg./l.) were filtered (5 m./hr.) through a column of Wofatite (cf. Pokhorov, *et al.*, *C.A.* 44, 8021d) the  $\text{H}^+$  of which was replaced with  $\text{Na}^+$ . At first the  $\text{Ag}^+$  was absorbed and then reduced to metallic Ag. The ion-exchange capacity ( $a$ ) of the resin was twice its normal  $a$  for  $\text{Ca}^{++}$ . Sols. of  $[\text{Ag}(\text{S}_2\text{O}_8)_2]^{2-}$  (25 mg./l.) were filtered through a column of *m*-phenylenediamine the  $\text{OH}^-$  of which was replaced by  $\text{SO}_4^{--}$ . At first the complex ion was absorbed; then a secondary reaction took place in which the anion-exchange resin acted as a catalyst:  $\text{AgS}$  was formed and passed through with the filtrate;  $\text{S}_2\text{O}_8^{--}$  remained with the resin. This was removed with  $\text{NaOH}$  and the resin was regenerated with  $\text{H}_2\text{SO}_4$ . After 25 cycles its  $a$  was retained. Replacing  $\text{OH}^-$  with  $\text{CO}_3^{--}$  increased  $a$  somewhat; replacing it with  $\text{SO}_4^{--}$  increased  $a$  to a max., especially at low pH. The reaction was suggested as a possible process for the recovery of Ag in waste photographic liquors.

I. Bencowitz

LUR'YE, Yu.Yu. ; PEREMYSLOVA, Ye.S.

Certain secondary ion-exchange reactions. Trudy Kom.anal.khim. 6:  
318-325 '55. (MLRA 9:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya,  
kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidro-  
geologii (VODGEO) i Minmetallurgkhimstroy SSSR.  
(Ion exchange)

LUR'YE, Yu. Yu.

USSR !

2572. Determination of acetone in sewage waters and other dilute solutions. Yu. Yu. Lur'ye and Z. V. Nikolaeva (*Zh. Anal. Khim.*, 1955, 21 (4), 410-413).—The colorimetric methods for determining acetone based on condensations with salicylaldehyde and with furfuraldehyde are studied. The latter method, due to Chelintsev and Nikitin (*J. Gen. Chem., U.S.S.R.*, 1933, 3, 319), is the more sensitive and is applied to the determination of acetone concentrations from 1 mg to several g per litre in sewage and other waters. A calibration curve is constructed by means of standard solutions containing from 1 to 20 mg of acetone per litre. Each solution (2.5 ml) is mixed with 0.2 ml of ethanolic furfuraldehyde solution (5 ml of furfuraldehyde in 100 ml of ethanol—the use of an ethanolic solution instead of the aq. solution of Chelintsev and Nikitin increases the sensitivity) and 0.5 ml of NaOH solution (10 g of NaOH in 100 ml of water), and after 30 min. at room temp. 15 ml of 50 per cent. H<sub>2</sub>SO<sub>4</sub> (400 ml of conc. H<sub>2</sub>SO<sub>4</sub> in 1 litre of solution) are added and the optical densities are determined, using green filters. The molar coeff. of absorption is 14,000. For the analysis of sewage waters a

(OVER)

Inst. "Vodgeo", Moscow

YU. YU. LURE

suitable vol. acidified with  $H_2SO_4$  is distilled until two-thirds of its bulk is collected. 50 ml of water are added to the distillation flask and a similar volume is collected by further distillation. The distillate is made up to a suitable vol. and an aliquot part is taken for determination by the procedure used for obtaining the calibration. Details of volumes employed are not given. Phenol and methanol  $< 100$  mg per litre do not interfere, but formaldehyde gives slightly high results.

G. S. SMITH

2/2

LUR'YE, YU. YU.

✓ Determination of cyanides and thiocyanates in very low concentrations. Yu. Yu. Lur'ye and V. A. Panova. *Zavodskaya Lab.* 21, 672-6 (1955).—To det.  $CN^-$  and  $CNS^-$  ions the method of Aldridge (*C.A.* 40, 1426<sup>4</sup>) is suggested with modifications. Treat the sample contg. not over 5% of  $CN^-$  and  $CNS^-$  ions with 2 ml.  $H_2O$ , add 0.2 ml. of satd. aq. Br, 0.2 ml. 2%  $As_2O_3$  soln., 3 ml. pyridine reagent (1 l. aq. pyridine soln., with 100 ml. concd. HCl) and 0.6 ml. 5% benzidine-HCl in 0.24N HCl. After 15-20 min., read the red color in a photometer, to give  $CN^- + CNS^-$ . In a 2nd test tube make the soln. acidic with 0.1N HCl, heat on a boiling bath 0.5 hr., and then det.  $CNS^-$  in a colorimeter. About 0.01 mg./l. of  $CN^-$  is not volatilized from the soln. Hydrazine sulfate can be substituted for arsenious acid.

G. M. Kosolapoff

① AA SKK

3



LUR'YE, Yu. Yu.

Category: USSR / Physical Chemistry - Surface phenomena. Adsorption.  
Chromatography. Ion exchange.

B-13

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30216

Author : Lur'ye Yu. Yu., Peremyslova Ye. S.  
Inst : Commission on Analytical Chemistry, Academy of Sciences USSR  
Title : Some Secondary Reactions Taking Place During Ion-Exchange

Orig Pub: Tr. komis. po analit. khimii AN SSSR, 1956, 6, 318-325

Abstract: Study of the processes of the reduction of  $Ag^+$  during filtration of  $AgNO_3$  solutions through columns containing the cathinite Wofatit P, and of the formation of  $Ag_2S$  on exchange of the Ag thiosulfate complex over TM and MFD anionites. See RZhKhim, 1955, 42724.

Card : 1/1

-23-

LUR YE, Yu-Yo.

✓ 2325. Determination of low concentrations of xanthates in industrial sewage waters. Yu. Yu. Lur'e and Z. V. Nikolaeva ("Vodgeo" Inst.). *Zh. Obshch. Khim.*, 1966, 23 (1), 30-35.—The sample of water (200 ml with xanthate concn. of 0.025 to 1 mg per litre, 100 ml with 1 to 10 mg per litre, and 25 ml with 10 to 90 mg per litre) is carefully neutralised in a separating funnel with 0.1 N acid or alkali, the amount necessary being determined by titration of a similar solution, with methyl orange as indicator. Buffer solution (5 to 10 ml), prepared by diluting 42 ml of 1 M acetic acid and 188 ml of 1 M Na acetate to 1 litre, and 5 ml of 0.04 M  $\text{NiSO}_4$  are added and the liquid is extracted with 1 to 1.5-ml portions of toluene (for lower concn.) or carbon tetrachloride (for higher concn.) until the extracting liquid remains colourless. The colour of the combined extracts is determined photometrically, with a blue filter, or the concn. is determined by colorimetric titration. Thiophosphates, zinc, simple cyanides, and complex cyanides of Zn do not interfere; Pb, Cu and complex cyanides of Cu interfere; methods for preventing interference are given. G. S. SMITH

2  
chem

LUR'YE, YU.YU.

AUTHOR:

LUR'YE, YU.YU., NIKOLAYEVA, Z.V.

32-6-3/54

TITLE:

Determination of Small Lead Concentrations. (Opredeleniye malykh kontsentratsiy svintsa, Russian)

PERIODICAL:

Zavodskaya Laboratoriya, 1957, Vol 23, Nr 6, pp 652-655 (U.S.S.R.)

ABSTRACT:

Two of the best methods for the determination of small lead concentrations are recommended:

- 1.) The "ditison" method,
- 2.) The chromatic method.

The former is described as very sensitive, and the second, though also of great accuracy, requires a collector (e.g. iron hydroxide or calcium carbonate). It is pointed out that the application of both methods to solutions containing besides lead also copper, zinc, or iron presents difficulties. In the case of the "ditison" method potassium cyanide must be used as a reagent, which, because of its poisonous nature, is difficult to obtain. In the case of the second method the lead chromate precipitation is connected with a lead precipitation, which fact disturbs the course of the analysis process. Previous binding of the iron with citric acid or tartaric acid decelerates the precipitation of lead chromate. In order to avoid these drawbacks new variations are suggested for both methods, which make

Card 1/2

Determination of Small Lead Concentrations.

32-6-3/54

the application of potassium cyanide in the "ditison" method superfluous. In the chromate method the disturbing effect of iron is eliminated, which is brought about by the previous separation of lead from iron. Laboratory work is described in detail. (3 Tables).

ASSOCIATION: Not given  
PRESENTED BY:  
SUBMITTED:  
AVAILABLE: Library of Congress

Card 2/2

Lur'ye, Yu. Yu.

## AUTHORS:

Lur'ye, Yu.Yu., Minenko, A.N.

32-7-3/49

## TITLE:

The Determination of Arsenic in Lead of High Purity by Means of the Complexon-Use (Opredeleniye mysh'yaka v svintse povyshennoy chistoty s primeneniem kompleksona)

## PERIODICAL:

Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 7, pp. 785-786 (USSR)

## ABSTRACT:

In the present case arsenic is separated from lead and concentrated in a solution. Hereby the arsenations are deposited with iron hydroxide. The method is used in that case, when there is arsenic in copper or zinc. As, however, the presence of ammonia in the deposit causes lead to precipitate, complex III (natrium-athylen-diamintetraacetate) should be used to bind it. In the consequent reaction iron is substituted by calcium while at the same time ironhydroxide is formed:  $Fe K \frac{1}{2} Ca^2 + 3OH = Fe(OH)_3 + CaK^2$ . The precipitate of iron hydroxide includes all the arsenic as arsenations in the solution; later it is precipitated as arsenic. A number of samples of pure lead (without content of arsenic) was dissolved in nitric acid and the following was added: 0; 0,5; 1; 2; 3; 4  $\mu$  As etc. This arsenic solution was treated in the usual way. At the same time another series of solutions with zero content (without lead) was produced with 0; 0,5; 1; 2; 3; 4  $\mu$  As etc. To the latter iron salt was added. Then the ironoxide together

Card 1/2

The Determination of Arsenic in Lead of High Purity by Means of the Complexon-Use. 32-7-3/49

together with arsenic was precipitated by means of an addition of ammonia and this was completed in the usual way. By this method a number of colors was obtained on the paper leaves. For every percent of additional arsenic a table with the arsenic content was given. (Examples given). There is 1 table.

ASSOCIATION: State Institute for Science and Research of Nonferrous Metals (Gosudarstvennyy nauchno-issledovatel'skiy institut tsvetnykh metallov)

AVAILABLE: Library of Congress

Card 2/2

AUTHOR: Lur'ye, Yu. Yu., Professor, Doctor of Chemical Sciences 32-10-10/32

TITLE: Comments

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol 23, Nr 10, pp 1181-1182 (USSR)

ABSTRACT: In his report on the occasion of the 40th anniversary of the October revolution, the author declares that present-day analytical chemistry might be described as chemistry of small quantities, or low concentrations. What previously, with a certain lack of respect, was called "traces" and was considered "uninteresting", has become of special importance today, viz. with the production of ideal pure metals in the research of elements which are finely distributed in rocks and ores, with investigations of the air and of the waters, of food, etc. This fact also led to the complete transformation of laboratories: nowadays special adequately insulated cabins with ideal pure air with constant temperature where special outfits for each special purpose are provided, such as: potentiometer, spectrophotometer, photocolormeter, nephelometer, "turbidimeter", flame-

Card 1/4

Comments

32-10-10/32

photometer, apparatus for "conductometric" and "amperometric" titrations, measuring instruments for absorption of ultraviolet, infrared, and X-rays by the solutions, further the fluorimeters, mass-spectrographs, outfits for the titration with high-frequency current, etc. besides the rooms in which basic experiments are carried out. According to the latest requirements special cabins for the works with radioactive isotopes are now fitted up. It can be taken for granted that in the future most of the work of the laboratories will be conferred to automatic devices and other outfits replacing human work, and carrying out the work both accurately and rapidly. Soviet scientists contributed largely to the elaboration of methods of analysis with which the use of an adequate outfit is required and the same scientists acquired in many cases incontestable priority in the world. In the field of the apparatus manufacture great success was achieved in the USSR. Soviet analysts now have good polarographs, photocolormeters ( $\Phi \text{Э K-M}$ ), spectrographs ( $\text{C}\Phi - 4$ ), and other outfits at their disposal. Nevertheless it must be stated with much regret that the number of outfits available in our laboratories is not yet sufficient.

Card 2/4



Comments

32-10-10/32

Moreover there are many outfits in use which were assembled by amateurs and which are of bad quality. On the other hand, interesting methods of photometric titration were elaborated some years ago for which certain outfits were required and since there was no time available for manufacturing these apparatus, these methods were dropped again. Organic analysis in general, and especially with respect to the determination of low concentrations is one of the most important chapters of analytic chemistry. Yet there is the difficulty that there are many organic substances which are in question, but the lists of inorganic cations and anions of which they dispose are only very modest. The consequence is that simple analysis-experiments often turn out to be complicated scientific research-works. Concluding his report, the author states that the whole field of sciences is not yet well introduced in the USSR which he explains with the fact that there are too few contacts between the specialists of analytic and organic chemistry. The author, however, is of the opinion that such contacts are very important and that they should be established.

Card 3/4

Comments

32-10-10/32

ASSOCIATION: Moscow Evening Institute for Mechanical Engineering  
(Moskovskiy vecherniy mashinostroitel'nyy institut)

AVAILABLE: Library of Congress

1. Chemistry-USSR-Progress

Card 4/4

*Leont'eva, Yuliy Yul'yevich*

LEONT'YEVA, Yuliy Yul'yevich; RYBNIKOVA, Anastasiya Ivanovna; LEONT'YEVA, K.D.,  
red.; SHPAK, Ye.G., tekhn.red.

[Chemical analysis of industrial sewage] Khimicheskii analiz proizvod-  
stvennykh stochnykh vod. Moskva, Gos. nauchno-tekhn.izd-vo khim.  
lit-ry, 1958. 187 p. (MIRA 11:3)  
(Sewage--Analysis) (Sanitary chemistry)

LUR'YE, Yu. Yu. (Moscow)

"Some Methods of Analysis in the Metallurgy of Nonferrous Metals which are based on the use of Complexon III."

report presented at the Symposium on the Theory and the Use of Complexons in Analytical Chemistry, called by the Commission for Analytical Chemistry, at the Inst. for Geochemistry and Analytical Chem. im V. I. Vernadskiy, AS USSR, Moscow, 28-30 Nov 1957.

(Zhur. Anal. Khim, 13, no. 2, p. 261-2, 1958, see Pozdnyakov, A. A.)

*LUR'YE, Yu. Yu.*  
AUTHORS: Lur'ye, Yu. Yu., Zaglodina, T. V. 32-2-2/60  
TITLE: The Determination of Antimony in Lead of Increased Purity  
(Opredeleniye sur'my v svintse povyshennoy chistoty)  
PERIODICAL: Zavodskaya Laboratoriya, 1950, Vol. 24, Nr 2, pp. 133-134  
(USSR)

ABSTRACT: In order to be able and determine quantities of about 1  $\gamma$  of antimony a new operational method had to be found, and for increasing the sensitivity of determination of antimony the colorimetric method had to be changed. The weighed portion of the lead sample to be investigated which was about 1 g and then twice evaporated with hydrochloric acid until it is dry is first dissolved in nitric acid. The oxidation of antimony as well as the transformation to the  $SbCl_6^-$  ion in the preparative stage should be carried out with diluted hydrochloric acid (3:1). Contrary to the usual course of analysis only 7 ml of toluene should be used for colorimetric measurement instead of 30 ml. The content of antimony is read, as usual, from the calibration curve. From the results of the analyses of various lead

Card 1/2

The Determination of Antimony in Lead of Increased Purity

32-2-2/60

samples of increased purity mentioned in a table it can be seen that this method for the determination of antimony operates with a sensitiveness of  $10^{-5}\%$  with a sample weight of 1 g. There are 2 tables and 1 reference which is Slavic

ASSOCIATION: State Institute for Nonferrous Metals  
(Gosudarstvennyy institut tsvetnykh metallov)

AVAILABLE: Library of Congress

1. Antimony-Determination 2. Colorimetry-Applications

Card 2/2

AUTHORS: Dymov, A.M., Professor, ~~Lur'va, Yu.Yu.~~, Professor, 32-24-4-67/67  
Alimarin, I.P., Corresponding Member AS USSR,  
Feygel', L.V., Members of the Chair for  
Analytical Chemistry at the Moscow Institute for Steel

TITLE: Vladimir Nikolayevich Alekseyev (Deceased) (Vladimir Nikolayevich  
Alekseyev)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 4, pp. 512-512 (USSR)

ABSTRACT: On January 23, Vladimir Nikolayevich Alekseyev, author of many  
textbooks on analytical chemistry and an excellent pedagogue,  
died at the age of 70 after a prolonged sickness. From 1915 to  
1954 Vladimir Nikolayevich Alekseyev worked at various institutes  
where he was concerned with investigations and pedagogic work in  
the field of analytical chemistry. During recent years he was  
appointed docent to the chair for analytical chemistry at the  
Moscow Institute for Steel. He is the author of 7 textbooks,  
among others of the first textbook on qualitative semimicroanal-  
yses. His textbooks for technical high schools attained the number  
of 8 editions, and those for universities 11 editions. His works  
are distinguished by their high degree of methodical arrangement.

Card 1/2

Vladimir Nikolayevich Alekseyev

32-24-4-67/67

clear interpretations, and distinct formulations, which contributed largely towards promoting the self-education of students of analytical chemistry. Vladimir Nikolayevich Alekseyev will for a long time to come be held in high esteem by students and pedagogues, mainly by the wide use that is made of his excellent textbooks.

1. Chemists--USSR

Card 2/2

USCOMM-DC-60240



SOV/63-4-2-18/39

14(9)

AUTHOR: Lur'ye, Yu.Yu., Professor

TITLE: The Analysis of Industrial Waste Waters

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 2,  
pp 256-259 (USSR)

ABSTRACT: Industrial waste waters are now analyzed according to all compounds contained in them, whereas formerly only the biological consumption of oxygen, the basicity or acidity, the content of suspended substances, etc, were determined. The admissible concentrations for many substances being very low, an exact and complete analysis is necessary. There are several difficulties: the low concentration of the analyzed substances; the complex composition of the waste waters; the instability of these waters due to reactions taking place in them continuously. In the determination of cations the fact must be considered that many organic compounds mask these cations, e.g. iron is often masked by oxyacids, phenols, etc. Chromium must be determined in its six-valent form for which the concentration admitted by the Glavnaya gosudarstvennaya inspektsiya (Main State Inspection) is 0.1 mg/l; for the three-valent chromium it is 0.5 mg/l. The determination of anions is more complicated.

Card 1/2

The Analysis of Industrial Waste Waters

SOV/63-4-2-18/39

Successful resolutions have been found for the systems: simple cyanides+complex cyanides+rhodanides+sulfides [Ref 14-17]. The found content of cations must be equal to the amount of anions. In waste waters this can be obtained only if corrective calculations are made. Organic matter is determined by the amount of oxidants consumed. This method is not exact, however. Phenols, aromatic amines, etc, are determined by the formation of azo-dyes [Ref 18]. V.I. Kuznetsov proposed reactions with metal ions for determining organic substances. Hydroquinone, xanthates [Ref 19, 20], etc, are determined by this method. The reaction of formaldehyde with other compounds is used in the determination of methyl alcohol, formic acid, ethylene glycol, etc [Ref 14-17]. There are 27 references, 11 of which are Soviet, 9 German, 2 English, 2 French, 1 American, 1 Dutch and 1 Czechoslovak.

Card 2/2

5 (3), 5 (1)  
AUTHORS:Lur'ye, Yu. Yu., Nikolayeva, Z. V.

05722

SOV/32-25-10-11/63

TITLE:

Separate Determination of Dibasic Phenols in Waste Water and Diluted Solutions

PERIODICAL:

Zavodskaya laboratoriya, 1959, Vol 25, Nr 10, pp 1186 - 1192 (USSR)

ABSTRACT:

Methods of determining individual phenols have been developed which are of importance for their utilization from waste water, as well as in connection with their different toxicity and different odor intensity of their chlorine derivatives. The determination of resorcinol, pyrocatechin, and hydroquinone is described in special chapters. Several modifications were applied to the method of determining resorcinol as suggested by Willard and Wooten (Ref 1); thus, it was made more sensitive and precise. The violet-colored compound formed in the presence of resorcinol, pyrocatechin, and iodine is extracted with n-butanol (instead of acetone), the molar light absorption coefficient amounting to 9552 (instead of 6365 in acetone). The method was tested on mixtures of pure dibasic phenols and industrial waste water (Table 1). If the waste water is colored, and contains large amounts of substances dis-

Card 1/3

05722

Separate Determination of Dibasic Phenols in Waste  
Water and Diluted Solutions

SOV/32-25-10-11/03

turbing the determination (sulphur compounds, ketones, aldehydes, etc), a preliminary treatment of the waste water by steam distillation from an alkaline or acid medium, or an extraction with ether, is carried out (Table 2). For the pyrocatechin determination, the method (with  $\text{FeSO}_4$ ) developed by A. L. Kursanov and M. N. Zaprometov (Ref 2), as well as the method by means of resorcinol, were tested. The former method is very selective, and gives the total content of phenols exhibiting two hydroxyl groups in metaposition in the benzene ring, but is much less sensitive than the latter method. It was found that the operational procedure for the latter method - according to which Willard and Wooten worked - was inadequate. Under the working conditions developed in the present case, a molar light absorption coefficient of 13,200 can be attained in the photolorimetric measurement (Table 3). For determining the hydroquinone, the method suggested by D. N. Vaskevich and Ts. A. Gol'dina (Ref 3) is most suitable, though it is neither very selective nor sensitive. The method was slightly modified, the disturbing influence of resorcinol

Card 2/3

Separate Determination of Dibasic Phenols in Waste  
Water and Diluted Solutions

05722  
SOV/32-25-10-11/63

and pyrocatechin either being eliminated by an extraction, with n-butanol, of their oxidation products obtained with iodine (one variant), or by adding resorcinol and pyrocatechin to the "zero solution" in the photolorimetric measurement (with the addition of sulphite to prevent oxidation by air). The sensitivity of the method is indicated with a molar light absorption coefficient of 910 (Table 4). There are 2 figures, 4 tables, and 3 references, 2 of which are Soviet.

ASSOCIATION: Institut VODGEO (VODGEO Institute)

Card 3/3

LUR'YE, Yu. Yu., prof.; PANOVA, V.A.

Method for controlling the degree of purity cyano-containing effluents  
by means of active chlorine. Gig.i san. 25 no.8:44-46 Ag '60.  
(MIRA 13:11)

1. Iz nauchno-issledovatel'skogo instituta vodosnabzheniya,  
kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy geologii,  
(WATER—POLLUTION) (CHLORINE)

PRSHIBIL, Rudol'f [Pribil, Rudolf], dotsent, doktor khim.nauk; KORYTA, I.  
[Koryta, Jiri], doktor; VAYNSHTEYN, Yu.I., kand.tekhn.nauk  
[translator]; LUR'YE, Yu.Yu., doktor khim.nauk, red.; ZAKHAR'YEV-  
SKIY, V.A., red.; PRIDANTSEVA, S.V., tekhn.red.

[Complexons in chemical analysis] Kompleksny v khimicheskoy  
analize. Izd.2., polnost'iu perer. i rasshirenoe. Avtor teore-  
ticheskoy chasti I.Koryta. Pod red. I.U.Lur'e. Moskva, Izd-vo  
inostr.lit-ry, 1960. 580 p. Translated from the Czech. (MIRA 13:9)  
(Chemistry, Analytical) (Complexons)

5.1310

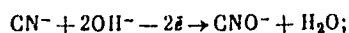
77646  
SOV/80-33-2-21/52

AUTHORS: Lur'ye, Yu. Yu., Genkin, V. Ye.

TITLE: Electrochemical Purification of Waste Water Containing Cyanides

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 2, pp 384-389 (USSR)

ABSTRACT: For purification studies, alkaline KCN solutions containing from 15 to 230 mg/l of  $CN^-$  ions and waste water from the metal plating department of the Moscow Likhachev Automobile Plant were used. Electrolysis was performed at room temperature, using stainless steel cathodes and platinum, graphite, stainless steel, magnetite, and nickel anodes. The cyanides are oxidized on the anode, mainly by the reaction:



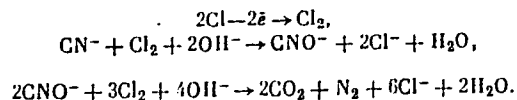
Card 1/4



Electrochemical Purification of Waste  
Water Containing Cyanides

77646  
SOV/80-33-2-21/52

and the  $CNO^-$  ions are further hydrolysed. All anodes were found effective, but graphite and magnetite are best because of their resistance to corrosion. Use of lower current densities ( $0.1-0.5 \text{ amp/dm}^2$ ) increases yield based on current to 30-40% compared with 2-4% at  $1-6 \text{ amp/dm}^2$ , and lower consumption of electricity to  $0.02 \text{ kw-hr/l g CN}^-$ . Decrease in  $CN^-$  concentration slows down anodic oxidation of cyanides. Addition of NaCl causes increase of yield based on current up to 60-80%, reduces power consumption to  $0.007-0.01 \text{ kw-hr/l g CN}^-$ , and speeds up the process. In the presence of  $Cl^-$ , the  $CN^-$  ions are oxidized by the liberated chlorine:



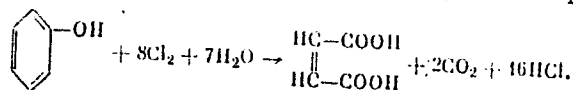
Card 2/4

Electrochemical Purification of Waste  
Water Containing Cyanides

77646

SOV/80-33-2-21/52

Electrolytic oxidation is most effective at a  $\text{Cl}^-$ / $\text{CN}^-$  ratio of from 3 to 5. Complex cyanides, e.g.,  $[\text{Cu}(\text{CN})_3]^-$ , and thiocyanate ions also undergo anodic oxidation with formation of nontoxic  $\text{CNO}^-$  ions and cupric and sulfate ions, respectively. Small quantities (in the order of several mg per liter) of phenol and cresol contained in the waste water can also be oxidized at the anode by the equation:



As compared with the chemical method of purification (reaction with the chloride of lime), electrochemical oxidation is more advantageous in that it requires relatively simple apparatus, does not leave precipitates, and its cost (i.e., cost of electric power) is less than the cost of bleaching powder (cost of electrical power

Card 3/4

Electrochemical Purification of Waste  
Water Containing Cyanides

77646

SOV/80-33-2-21/52

for anodic oxidation of 1 g  $\text{CN}^-$  is 0.15-0.20 kopeck (at 0.1 amp/dm<sup>2</sup>), while cost of bleaching powder necessary to decompose the same quantity of  $\text{CN}^-$  ions is 0.45-0.5 kopeck). Before electrochemical treatment the waste water must be freed from coarse impurities by decantation, filtering, etc. There are 3 tables; and 2 figures.

SUBMITTED:

March 31, 1959

Card 4/4

LUR'YE, Yu.Yu.; PANOVA, V.A.

Some remarks on the detection of cyanides and active chlorine in  
purified waste water. TSvet. met. 33 no.8:14-15 Ag '60.

(MIRA 13:8)

(Industrial wastes) (Water--Analysis)

KOL'TGOF, I.M. [Kolthoff, I.M.]; BELCHER, R.; STENGER, V.A.; MATSUYAMA, Dzh.  
[Matsuyama, G.]; LUR'YE, Yu.Yu., prof., red.; VASKEVICH, D.N., red.;  
ZAZUL'SKAYA, V.F., tekhn. red.

[Volumetric analysis] Ob"emyi analiz. Pod red. i s dopolneniami  
IU.IU.Lur'e. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry.  
Vol.3.[Practical part; oxidation-reduction methods] Prakticheskaia  
chast': Metody okisleniia--vosstanovleniia. 1961. 840 p. Publ. in  
English under the title: "Titration methods: oxidation-reduction  
reaction. (MIRA 14:8)  
(Chemistry, Analytical) (Oxidation-reduction reaction)

S/136/61/000/011/001/007  
E142/E165

AUTHORS: Lur'ye, Yu. Yu., and Antipova, P.S.

TITLE: Extraction of bichromate ions from effluents with anion-exchange resins

PERIODICAL: Tsvetnyye metally, no.11, 1961, 25

TEXT: During the chemical purification of effluents valuable substances contained in the effluents are lost. This can be avoided by purification with ion-exchange resins. Chromates can be extracted by using highly basic anion-exchange resins, e.g. AB-17 (AV-17). Chromic acid and chromate ions are strong acids and the satisfactory results obtained during these experiments are due to the oxidation-resistance of the anion-exchange resin. Good results were also obtained during extraction and regeneration of hexavalent chromium with the low-basic anion-exchange resin AH-18 (AN-18), which was prepared at the Institut plastmass (Plastics Institute). It was obtained by reacting chloromethylated copolymers with dimethylamine. The anion-exchange resin consists of light yellow grains of 0.3 - 1.5 mm diameter. It was subjected to swelling and then placed in a 1-cm diameter glass tube, treated

Card 1/3

Extraction of bichromate ions from ... S/136/61/000/011/001/007  
E142/E165

with 2% HCl and washed with water. The chromium solutions were prepared from  $K_2Cr_2O_7$  at a pH of 4.4 - 4.8. The rate of filtration was 5 m/h. The chromium content of the filtrate was determined by the colorimetric method (described by Yu.Yu. Lur'ye and A.I. Rybnikova - "Chemical analysis of industrial effluents", Moscow, Goskhimizdat, 1958) with diphenylcarbazide. These investigations have shown that a solution containing 3% NaOH and 5% NaCl was most effective and economical in use. During tests on the extraction of chromium with the aid of AN-18, the authors used 3 g of the resin in chloroform, filtered one litre of chromium-containing water and regenerated the solution with a solution containing 3% NaOH and 5% NaCl. The end product contained 196.2 mg chromium, which corresponded to 99.1% of the retained anion-exchange resin. The latter was regenerated with the same solution as used above. Recovery, in all cases, was 99.3 - 99.8%. The first fractions contained 15-20 g/litre  $Cr^{6+}$

Card 2/3

Extraction of ....

S/136/61/000/011/001/007  
E142/E365

(thus, ion-exchange with subsequent regeneration results in a 75- to 100-fold concentration of the chromate). The regenerated solution can then be used for the extraction of the chromate, for recovery in industrial processes and for the preparation of chromium pigments. A regenerated solution containing a small quantity of chromium can be recycled for the regeneration of the anion-exchange resin. Three-fold recycling of the resin did not alter its consistency. The anion-exchange resin AN-18 can be recommended for further tests in experimental and industrial plants dealing with the purification of effluents.

[Abstractor's note: Abridged translation.]

Card 3/3



LUR'YE, Yu. Yu., doktor khimicheskikh nauk; YEVLANOVA, A.V., kand.khimicheskikh nauk; GENKIN, V. Ye.; STEFANOVICH, S.N.

Purification of waste waters from factories manufacturing flavoring essences. Zhur. VKHO 6 no.2:181-197 ' 61. (MIRA 14:3)  
(Sewage disposal) (Flavoring essences)

LUR'YE, Yu.Yu.; PANOVA, V.A.

Determination of aliphatic amines in industrial waste waters. Zav.  
lab. 27 no.11:1333-1336 '61. (MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya,  
kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy  
gidrogeologii.  
(Amines) (Sewage---Analysis)

LUR'YE, Yu.Yu., prof.; ANTIPOVA, P.S.; BELEVITSEV, A.N.

Purification of waste waters from fluorides. TSvet, mat. 34 no.2:  
43-47 F '61. (MIRA 14:6)  
(Industrial wastes) (Water--Purification)

LUR'YE, Yu.Yu.; ANTIPOVA, P.S.

Recovery of bichromate-ions from aqueous solutions by  
anionites. TSvet. met. 34 no.11:25 N '61. (MIRA 14:11)  
(Chromium) (Ion exchange)

LUR'YE, Yuliy Yul'yevich; AGASYAN, P.K., red.; ZAZUL'SKAYA, V.F.,  
tekh. red.

[Manual on analytical chemistry] Spravochnik po analiticheskoi  
khimii. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry,  
1962. 287 p. (MIRA 15:4)  
(Chemistry, Analytical--Laboratory manuals)

LUR'YE, Yu.Yu.; PANOVA, V.A.

Determination of pine oil in waste waters from ore-cleaning plants. Zav.lab. 28 no.2:154-156 '62. (MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrogeologii.

(Turpentine oil) (Sewage—Analysis)

LUR'YE, Yu.Yu.; PANOVA, V.A.

Determination of furfurole and its derivatives in industrial  
waste waters. Zav.lab. 28 no.3:281-285 '62. (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya,  
kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy  
gidrogeologii.

(Furaldehyde) (Sewage--Analysis)

S/076/63/037/001/002/029  
B101/B186

AUTHORS: Lur'ye, Yu. Yu., Kandzas, P. F., Mokina, A. A. (Moscow)

TITLE: Decomposition of carbon tetrachloride in a field of ultrasonic waves

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 1, 1963, 13-17

TEXT: This paper is part of a study on the ultrasonic purification of industrial waste waters. A piezoquartz transducer was used at 800 kc/sec

and 19 - 21°C. Preliminary experiments with 0.1 N HCl and 600 mg/l NaCl showed that the chlorides do not oxidize and the reaction

$2 \text{HCl} + [\text{O}] \rightarrow \text{Cl}_2 + \text{H}_2\text{O}$  mentioned by E. W. Flosdorf and L. A. Chambers

(J. Amer. Chem. Soc., 55, 3051, 1933) does not take place. The decomposition products of  $\text{CCl}_4$  were found to be chlorine, chlorides, and

hypochlorites.. From the results obtained by analyzing the decomposition products, the reaction  $\text{CCl}_4 + \text{H}_2\text{O} \rightarrow 2 \text{Cl} + 2\text{HCl} + \text{CO}$  was confirmed for the

decomposition of  $\text{CCl}_4$  in an aqueous medium under the action of ultrasonic  
Card 1/2



S/076/63/037/001/002/029

Decomposition of carbon tetrachloride in ... B101/B186

waves. Furthermore, the pH of the medium was found to have no decisive effect on this process. At a  $\text{CCl}_4$  concentration of 44 - 336 mg/l the portion of decomposed  $\text{CCl}_4$  is 61 - 63%, and does not depend on the concentration. Higher concentrations retard the decomposition. An increase in intensity from 1  $\text{w/cm}^2$  to 4  $\text{w/cm}^2$  increases the portion of decomposed  $\text{CCl}_4$  from 12.6 to 63.4%, but beyond 6  $\text{w/cm}^2$  increases the decomposition rate no longer. The main amount of  $\text{CCl}_4$  decomposes within the first 15 - 20 min. Ultrasonic irradiation over a longer period decreases the rate of decomposition. Approximately 50% of  $\text{CCl}_4$  is removed from the solution by ultrasonic irradiation. There are 5 tables.

SUBMITTED: March 11, 1962

Card 2/2

SIDOROV, A.A., otv. red.; ZHUKOV, A.I., red.; KALABINA, M.M., red.;  
LUR'YE, Yu. Yu., red.; MONGAYT, I.L., red.; ROGOVSKAYA, Ts.I.,  
red.; RYBNIKOVA, A.I., red.; SKVORTSOVA, I.P., red.izd-va;  
SMIRNOVA, A.P., red.izd-va; MOCHALINA, Z.S., tekhn. red.

[Purification of industrial sewage]Ochistka promyshlennykh  
stochnykh vod; trudy sovместnoi konferentsii Instituta Vodgeo  
ASIA SSSR i Instituta vodnogo khoziaistva Ministerstva zemle-  
deliia, lesnogo i vodnogo khoziaistva ChSSR. Moskva, Gosstroi-  
izdat, 1962. 448 p. (MIRA 16:2)

1. Konferentsiya po ochistke fenol'nykh stochnykh vod, Moscow,  
1960.

(Phenols) (Sewage--Purification)

LUR'YE, Yuliy Yul'yevich; RYBNIKOVA, Anastasiya Ivanovna; VASKEVICH,  
D.N., red.; SHPAK, Ye.G., tekhn. red.

[Chemical analysis of industrial waste waters] Khimicheskii analiz  
produktivnykh stochnykh vod. Izd.2., perer. i dop. Moskva,  
Goskhimizdat, 1963. 251 p. (MIRA 16:3)  
(Sewage--Analysis)

LUR'YE, Yu. Yu.; KANDZAS, P. F.; MOKINA, A. A.

Oxidation of phenol in the field of ultrasonic waves. Zhur.  
fiz. khim. 36 no.12:2616-2620 D '62.

(MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnab-  
zheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i  
inzhenernoy gidrogeologii.

(Phenol) (Oxidation)  
(Ultrasonic waves—Industrial applications)

LUR'YE, Yu.Yu.; PANOVA, V.A.

Determination of small quantities of aromatic hydrocarbons  
in waste waters. Zav.lab. 29 no.3:293-295 '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut  
vodoshabzheniya, kanalizatsii, gidrotekhnicheskikh  
sooruzheniy i inzhenernoy gidrogeologii.  
(Sewage--Analysis)  
(Hydrocarbons)

LUR'YEV, Yu.Yu.; PANOVA, V.A.

Determination of turpentine in waste waters. Zav.lab. 29  
no.1:33-35 '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnab-  
zheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i  
inzhenernoy gidrogeologii.  
(Turpentine) (Sewage—Analysis)

LUR'YE, Yu.Yu.; KANDZAS, P.F.; MOKINA, A.A. (Moscow)

Oxidation of potassium iodide in a field of ultrasonic waves.  
Zhur. fiz. khim. 36 no.11:2329-2333 N'62. (MIRA 17.5)

LUR'YE, Yu.Yu.; ZHAL'NERYUS, I.Yu.

Determining free acid in solutions containing large amounts of  
tri- and bivalent iron. Zav.lab. 30 no.3:275 '64. (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya,  
kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy  
gidrogeologii.



LUR'YE, Yu.Yu.; ALFEROVA, L.A.; BONDAREVA, T.N.

Separate determination of low-molecular fatty acids in waste  
waters. Zav. lab. 30 no.7:799-801 '64. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya,  
kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy  
gidrogeologii.

LUR'YE, Yu.Yu.; NIKOLAYEVA, Z.V.

Determination of monoatomic phenols in waste waters by paper chromatography. Zav. lab. 30 no.8:937-942 '64. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrogeologii.

LUR'YE, Ya.Ya.; PANOVA, V.A.

Behavior of cyanides in a body of water. *Gidrotekhn. nat. VI*:  
133-143 '64. (GIRA 1714)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya,  
kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenerney gidro-  
geologii, Moskva.

LUR'YE, Yu.Yu.; KRASNOV, B.P.

Sorption of phenols by anion exchangers of medium and high basicity  
from dilute solutions. Zhur. prikl. khim. 37 no. 4:864-868 Ap '64.  
(MIRA 17:5)